The Journal
OF THE
Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

VOL. XIX. AUGUST, 1915. No. 8.

BOARD OF MANAGEMENT.

The usual monthly Meeting of the Board of Management of the Jamaica Agricultural Society was held at the Office of the Society, 11 North Parade, Kingston, on Wednesday, 14th July, 1915, at 2 p.m., Present: His Excellency Sir Wm. H. Manning, K.C.M.G., C.B., (presiding), Sir Jno. Pringle, K.C.M.G., Hons. L. J. Bertram, C.M.G., H. H. Cousins (Director of Agriculture), D. Campbell, Geo. McGrath, R. P. Simmonds, S. S. Stedman and J. R. Williams; Messrs. Robt. Craig, A. W. Douet, A. C. L. Martin, E. W. Muirhead, Adam Roxburgh, Archibald Spooner, Conrad Watson, Rev. W. T. Graham, and the Secretary, Jno. Barclay.

Apology for absence was submitted from Mr. H. Q. Levy.

The Minutes of the previous Meeting having been printed and circulated were taken as read and confirmed.

The following matters arising out of the Minutes were considered:

(a) *Pod Rot and Canker of Cocoa.*—The Secretary said that this matter had been held over from the previous Meeting. He would re-read the letter from the C.S.O., asking for consideration of the subject:—

No. 4146-4915. 31st March, 1915.

"I am directed by the Governor to state, for the information of the Agricultural Society, that the Director of Agriculture has recommended, for the consideration of His Excellency, that "Pod Rot" and "Canker" of cacao shall be added to the list of infectious plant diseases under Law 3 of 1915, and that rules should be made for the sanitary treatment of all cacao pods after the beans have been shelled, and of all diseased pods, as also for the excision and tarring of canker in affected trees.

2. "I am to ask that the Committee of Management of the Society will be so good as to give the proposal of the Director of Agriculture their early consideration, and favour His Excellency with their advice on the matter."

(Sgd.) F. L. PEARCE,
Actg. Asst. Colonial Secretary.

The President said he should like to hear the opinions of the members of the Board of Management on the matter.

Mr. Craig suggested that they should hear what Mr. Cousins (Director of Agriculture) had to say first.

Mr. Cousins said it had been impressed upon him that they should have new rules for the sanitary treatment of cocoa pods and compulsory treatment of Canker of cocoa. He generally supported the proposal to bring Pod Rot and Canker of Cocoa under the Protection from Disease Plants Law. (The remarks of the Director of Agriculture and a letter from him on the subject of Canker of Cocoa, are published in full on another page of this JOURNAL).

Mr. Craig contended that the proposal, if authorized, would certainly prove harassing and create a false impression as to the condition of the cocoa industry in Jamaica; that Canker was not confined to cocoa trees alone, but was also common to Mango, Avocado Pears, etc., and so long as these trees remained a constant source of infection he could see no sense in the proposal; that the planter was quite alive to his own interests and was prepared to deal with Pod Rot and Canker, while the small settler was being taught how to deal with these diseases by the Agricultural Instructors. He would support the proposal for the disposal of broken cocoa pods, provided every purchaser of cocoa in the pod was dealt with as well as the planter. He did not think that a Penal Law should be invoked, unless, it could be shown beyond question that a plant disease was likely to, or might, as in the case of Panama Disease ruin any cultivation. The study of diseases of cocoa was still rudimentary. He would oppose the proposal.

The Rev. Mr. Graham read a letter from a prominent cocoa planter which stated that 'draconian' measures, such as were suggested, would not help by themselves, as they apparently only dealt with effects not causes.

Sir Jno. Pringle also held that the present time was inopportune for introducing such measures. They were all still in the experimental stage as regards cocoa.

Mr. McGrath also opposed the proposal.

Mr. Campbell supported the proposal and said that just as measures had to be taken as regards Panama Disease, they should take similar measures to deal with Canker of Cocoa.

After discussion the President said he took it that it was the feeling of the meeting that no legislation was desired to deal with Pod Rot and Canker.

The Meeting agreed.

(The discussion on this subject is published on page 292 .)

(*b*) *Praedial Larceny & Flogging.*—The Secretary said he had been asked at the previous meeting of the Board to get a return from the Inspector General of the number of cases of flogging over a certain period, say the year 1914; he had asked for this but had not yet got it.

(*c*) *Sugar—Report from Staple & Minor Products Committee.*—The Secretary said the Papers circulated to the Staple & Minor Products Committee with regard to the resolution to be sent to the West India Committee *re* Sugar, had not yet been returned, but it had been left to that Committee to deal with the matter without reference first to the Board, and he expected to get the Papers back within 2 or 3 days when the resolution would be sent forward to the Colonial Secretary.

The following letters from the C.S.O. were submitted:—

(*a*) *Re Flogging in Trinidad.*—

No. 7930-8086. 21st June, 1915.

"In continuation of the letter from this Office, No. 7315-7794, dated the 8th instant, I am directed by the Governor to transmit for the information of your Society the accompanying copy of a further Return of Corporal Punishments ordered in Trinidad during the two years ended 31st March, 1915, for Praedial Larceny and offences under the Sale of Produce Ordinance of that Colony."

(Sgd.) G. M. Wortley,
Ag. Asst. Colonial Secretary.

The Return showed 21 cases of Corporal Punishment for Praedial Larceny for the two years ended 31st March, 1915.

(b) *Re Report on Rules for Sale of Crown Lands.*—The Secretary said he had reminded the C.S.O. that a Special Committee of the Society had sent in a Report with suggestions as regards the Rules for the Sale of Crown Lands, which had been referred to a Special Committee of the Legislative Council, but no further acknowledgment had yet been received by the Society. The following was the reply from the C.S.O.:—

No. 8661-9610. 8th July, 1915.

"With reference to your letter, No. 1370, dated the 29th ultimo, I am directed by the Governor to inform you that His Excellency understands that the recommendations of the Jamaica Agricultural Society with regard to the scheme for the sale of Crown Lands have been considered by the Special Committee of the Legislative Council on the subject, but that the report of the Committee has not yet been received by His Excellency."

(Sgd.) ROBT. JOHNSTONE,
Actg. Colonial Secretary.

Authorized Persons—Causes for striking off List.—The Secretary said he would now submit letters from the Inspector General giving the particulars he had been asked to get at the last meeting of the Board, as follows:—

No. 454-1895/15. 16th June, 1915.

"With reference to the latter part of your letter, No. 397, of 28th April last, I now forward to you a Return of the number of 'authorized persons' struck off the list, showing causes for which they were struck off.

2. "As this information is always supplied on your being notified of the striking off of any 'authorized persons,' you will, in future, be able to furnish similar Returns from the reports sent you, from time to time, by this Department."

Return showing the number of "authorized persons" struck off the list, and the cause for striking them off, to 15/6/15.

Dead	30
Left the Island	23
Left the District	5
Joined Rural Police	45
Incapable of Duties	17
Improper conduct (various)	12
Resigned	12
Joined Police Force	1
Refused to accept appointment	4
	149

No. 520-3013/15. 14th July, 1915.

"I have to acknowledge the receipt of your letter No. 35 of the 10th instant, and in reply to inform you that, of the twelve cases of dismissal of Authorized Persons for Improper Conduct, seven were the results of convictions in Court for the following offences:—

1 for Buying Produce without License.
2 ,, Assaulting the Police.
1 ,, Improper Conduct in a Spirit Shop.
1 ,, Committing Assault.
1 ,, Having in possession unduty paid Rum.
1 ,, Stealing growing plants.
3 were dismissed for receiving money and releasing the arrested person, and 2 for wilful neglect of duty.

2. In the last five cases I revoked the appointments under the provisions of Law 4 of 1909."

(Sgd.) A. E. KERSHAW, Lt.-Col.
Inspector General of Police.

Mr. McGrath said that these Returns were what he had been asking for, for some time, and he thought the particulars should be published to satisfy those who did not know how and why "Authorized Persons" were relieved of their appointments.

The Secretary said that he would be able in future to supply these statistics himself, as he was now keeping a book with the "Authorized Persons" of each Branch, and the reason for their being struck off would be noted in it.

Prohibition of the Importation of Hay, etc.—The Secretary said just after the last Board Meeting he had received the following letter, copy of which he had forwarded to the C.S.O., and he now also submitted the reply from the C.S.O.:—

17th June, 1915.

"Our Mr. Brandon who has just returned from the United States finds that though the prohibition against the importation of American Hay still exists here, large quantities of this article are being exported to the United Kingdom on certificate declaring the point of origin. From this point a clean B/Lading is issued showing the section of country from which the hay is reaped and the certificate also shows that the Foot and Mouth Disease have not existed for the past four months in that particular district.

We will be pleased if you would place this before your Board and suggest to the Government that we be allowed to import American Hay under the same conditions.

Our statements can be verified by the British Consul in New York.

Awaiting your early and favourable reply."

(Sgd.) H. M. BRANDON & Co.

Reply from C. S. O.—

No. 8740-9342. 10th July, 1915.

"I am directed by the Governor to acknowledge the receipt of your letter, No. 1223, dated the 23rd ultimo, relative to the question of the removal of the embargo on the importation of American hay into Jamaica, which was imposed in consequence of the outbreak of Foot and Mouth Disease in the United States of America.

2. "In reply I am to inform you that before taking steps in the matter, the British Ambassador at Washington is being asked to furnish further particulars with respect to the outbreak of this disease."

(Sgd.) ROBT. JOHNSTONE,
Acting Colonial Secretary.

War Gifts.—The Secretary submitted letter from the C.S.O., dated 14th July, 1915, enclosing acknowledgment from the Secretary of the West India Committee to the Crown Agents for the Colonies, of the War Gifts shipped by the S.S. "Chagres" on the 4th June; also the following letter from the C.S.O. *re* shipment by the S.S. "Manzanares" on the 1st July:—

No. 8596-9824. 6th July, 1915.

"I am directed by the Governor to acknowledge the receipt of your letter No. 1454, dated the 2nd instant, enclosing Bill of Lading for ninety-eight packages of fruit, honey, and preserves, representing a further War Gift from the members of the Jamaica Agricultural Society which you had shipped to the address of the Crown Agents for the Colonies on the S.S. "Manzanares" on the 1st instant.

2. His Excellency desires that an expression of his appreciation of this further kind and thoughtful action may be conveyed to the donors."

(Sgd.) ROBT. JOHNSTONE,

The Secretary said he had further shipped by the S.S. "Coronado" on the 21st June, 25 boxes of Grapefruit. He had also shipped by the S.S. "Manzanares" on the 1st July:

7 Cases of Preserves (containing 410 lbs.)

60 boxes of Oranges.

10 boxes of Grapefruit.

1 cask of Honey (containing 28 gallons.)

9 cases of Banana Figs (554 lbs.)

1 case containing sundry articles of clothing.

11 cases of Gifts for individual soldiers (containing Preserves, Tobacco, etc.)

Report from Live Stock Committee.—The Secretary said that the Live Stock Committee had met at 12.45 that day (just before the Board Meeting) to transact business, and they had directed him to bring to the notice of the Board that no Report had yet been received from the Government on the matter of the Society's recommendations. *re* the Registration of Stallions. The Legislative Council had appointed a Special Committee to deal with the matter, the Chairman of which was the Hon. J. V. Calder who had written him that the delay was caused by the death of the Hon. J. M. Farquharson and the absence of Col. Moulton-Barrett from the Island, both of whom were members of the Committee.

The Board directed the Secretary to draw the attention of the Government to this, and to suggest that two new members might be appointed on the Special Committee, so that the matter might receive consideration.

Application for Affiliation.—An application was submitted from Wallingford District near Guys Hill for the affiliation of a local Agricultural Society formed there. This was held over until a report from the Instructor was received.

Secretary's Half-Yearly Report.—The Secretary submitted his Report for the half-year ending 31st March, 1915. Several slight errors were pointed out which were corrected.

Instructors Reports.—The Instructors Reports for the month of June and their Itineraries were submitted and directed to be circulated to the Instructors Committee as usual.

Statement of Accounts.—Statement of Accounts was submitted and tabled.

New Members.—The following new members were elected:—

A. Woods, P.O. Box 14, Belize, B. Honduras.

Henry W. Holgate, Serge Island Estate, Seaforth.

C. W. M. Saunders, Serge Island Estate, Seaforth.

James Marshall, No. 3 Norman Crescent, Kingston.

A. H. Ritchie (Government Entomologist), c/o Hon. Director of Agriculture, Hope, Kingston P.O.

The Meeting adjourned until Thursday, the 19th August, 1915, at 11.40 a.m.

POD ROT AND CANKER OF COCOA.

The following is nearly a full Report of the discussion on this matter at the Meeting of the Board of Management of the Society held on Wednesday, the 14th July, 1915, at 2 p.m., and which is shortly referred to in the Minutes of the Meeting published at the beginning of this JOURNAL:—

The President said he should like to hear the opinions of members of the Board of Management on the matter.

Mr. Craig: We would like to hear Mr. Cousins. (Director of Agriculture.)

Mr. Cousins said certain planters had impressed upon him the desirability of adding the common diseases of Cacao to the schedule of 'infectious' and non-notifiable diseases under the new Diseases of Plants Law. He had therefore submitted to His Excellency for the advice of this Board two proposals, viz.:—

1. That there should be compulsory measures for the sanitary disposition of broken Cacao pods, either by burial, burning or liming.

2. That "Canker" should be scheduled as an 'infectious disease' of Cacao under the new Law and the excision and tarring of the superficially affected areas on the trees be laid down as the prescribed treatment.

It had been represented that a good deal of infection of 'pod-rot' arose from the careless manner in which small buyers and others allowed heaps of infected pods to lie about and serve as a focus for the spread of the spores of the 'pod-rot' fungus.

With regard to the question as to the presence of the fungi causing pod-rot and canker in Cacao upon other trees such as pears, mangoes, guavas, etc., the evidence was that this was not the case.

The 'Phytophthora' causing Pod-Rot and the chief cause of Canker was apparently a fungus peculiar to Cacao. The only cases recorded of this fungus being found on other trees came from Ceylon where Para Rubber Trees and Breadfruit planted among Cacao were found to have been infected with the Cacao disease.

The Microbiologist had not met with any such cases, however, in Jamaica.

There were three organisms which Mr. Ashby had found to be concerned in different types of Canker on Cacao in Jamaica and the commonest of these was the same as pod-rot. Another source of Canker was the "Die-Back" fungus, and the third the "Bonnygate Disease of Bananas" which the Department had recently found to be causing canker in Cacao trees subjected to infection from Bananas.

No cases of the 'Die-back' fungus had been found in Jamaica on plants other than Cacao. Cankers were very common ailments of our trees, but it would appear that they had their own hosts and that many species were at work.

It was true that the Agricultural Department could not at present afford the staff to enforce the treatment except here and there, and the scheduling of these diseases would, at the outset, remain more or less, as an accepted standard of good practice and not of legal compulsion. At the same time, it was only fair to acknowledge that in Trinidad where Mycology had had a start before Jamaica and where Cacao was the chief staple of the country, Pod Rot and Canker had not been deealt witb under the Plant Disease Law of that Colony.

Cacao had recently advanced from the position of a minor product to that of a major staple in our exports, and it was therefore important to do everything possible to protect the health of the Cacao trees. At the same time it was not wise to legislate in advance of public opinion.

The President said before Mr. Cousins sat down he would like to hear what would be the effect in practice if Cacao diseases were put on the schedule.

Mr. Cousins said:—"In the first place all broken Cacao pods would have to be disposed of under regulations prescribing their sanitary treatment by burial, burning or liming. With regard to "Canker" the owner would be called upon to cut out any superficial patches of canker on his Cacao trees and to tar the surface.

Under the Law, if an owner failed to carry out the treatment of an 'infectious' disease the Department was authorised to call upon him to do it, or eventually to carry out the treatment at the cost of the owner."

Mr. Craig: Any spraying?

Mr. Cousins: No.

Mr. Craig said: "This is a proposal to interfere with the cocoa planter in his methods of sanitation and the care of his cultivation, and to dictate to him what methods he shall employ in his treatment of the diseases known as canker and pod rot—and also in the disposal of cocoa shells or husks. This proposal, if authorised, will certainly prove harassing, and create a false impression as to the condition of the cocoa industry in Jamalca. If tbe disease known as "canker" was confined to cocoa trees only, and not, as is the fact, common to many other trees, such as the mango, trumpet tree, avocado pear, etc., there might be some reason in the sug-

gestion: but so long as these other trees are immune from treatment, and remain a constant source of infection, I see no sense in this proposal. It is, I think, beyond question impossible to eradicate canker and pod rot from any cultivation of cocoa, at all events for any length of time—both will always be present, in my opinion, and it is the interest of the planter to repress both. He is quite alive to the necessity of this and, for the most part knows how to treat both diseases, and is anxious to obtain the best advice available—on all the diseases of cocoa—while the small settler who has cocoa, has been and is being taught how to deal with them, by the Instructors of this Society.

As regard the disposal of broken cocoa pods, I will support that proposal, providing it is dealt with comprehensively and economically. I mean if an order is made it will apply not to the planter and small settler only, but to every purchaser of cocoa in the pod. To help in this matter, and also to check the theft of cocoa from the tree—which is rampant—I consider that a licence to purchase cocoa, in the pod, should only be granted to persons who possess proper premises and appliances for curing cocoa—these premises should be subject to inspection at any time and a book kept with particulars of every purchase made. It is well known to every intelligent planter that the study of the diseases of cocoa is still rudimentary, and that it is only within the past 15 years or so that any science has been brought to bear on these—also, that further study must be made of the remedial measures against diseases, in order that the most direct and economical methods may be adopted.

It is also, I think, admitted that "The Protection from Disease Plants Law," passed in March last, requires amendment, to make it more intelligible to the lay mind, and to limit the powers granted in it to the Director of Agriculture. In these circumstances it will be agreed, I think, that great caution is necessary before orders are made under it—and unless it can be shown, beyond question, that a plant disease is likely to, or might (as in the case of Panama disease) ruin any cultivation, a penal law should not be invoked. I do not believe that ruin is threatening the cocoa industry, and I hold that the control of the diseases of cocoa known to us, is well within the capacity of the planter. The methods of doing so are debatable, and a law which does not provide complete machinery to give effect to it, cannot afford much protection, or be of much use.

The Rev. W. T. Graham read the following letter which he had received from a prominent cocoa planter:—

"What is commonly known as Pod rot" and "Canker" on cocoa trees are no doubt, capable of transmission to other trees. But is equally true that they are due to conditions surrounding the trees, such as excessive shade, defective drainage, over-crowding, and damp, arising from bushes near by perhaps growing on a neighbour's land.

"Draconian measures, such as these suggested, will not help by themselves, since they will apparently only deal with effects not causes.

"My experiences taught me that close planting once openly advised, has given rise to much of the trouble; letting in the sunlight in moderation, provides the surest remedy.

"Apropos of cocoa. When will something be done to stop the sale and purchase of green, immature pods, by the licensed buyers? It is a crying scandal, calculated to ruin the island's reputation for turning out a decent article. Prompt confiscation of the license should follow when green pods are found at a receiving shed, no matter by whom sold; when there is no receiver, the thief must go out of business."

"Another fruitful source of trouble comes from leaving the empty pods cut by rats on the trees to get filled with rain water and provide receptacles for germs."

Sir John Pringle said there was a great deal in what Mr. Graham had read, While be (the speaker) was always in favour of introducing remedial measures for the betterment of these matters, he did not think the present time was opportune for introducing such measures. A good deal of experimenting was going on at present in the country, but he would frankly confess that there was a great deal of room for improvement. He, himself, had been experimenting with cocoa, but it had not yet come to a stage when he could give definite opinions on the results.

Mr. McGrath said he agreed with what Sir John Pringle and Messrs. Graham and Craig had said. It would appear that they were now getting to a stage where the cocoa planters were being told that they did not know their business. He thought that things should remain just as they were for the present.

Mr. Dugald Campbell said there was not a man who could say that he did not have canker of cocoa on his property, and just as measures had to be taken regarding the Panama disease, they would have to do something in this matter.

Mr. Simmonds said he agreed with a portion of what Mr. Cousins but they could not introduce any drastic measure to deal with this mat present time. It would simply mean their adding an unworkable Law to of laws which were already on the Statute Book, and which were not in He thought they should go slow at the present moment.

Mr. Craig said the Chinese were the persons who were now buying m cocoa. It had been brought to his notice that the Chinese bought the c it had been removed from the pods.

The President said he took it that it was the feeling of the meetin legislation was desirable.

The members: Yes.

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The following letter from the Director of Agriculture to the Secretary submitted:—

No. Z. 458. 2nd June

"In reply to your letter of the 27th ulto., in which you ask on beh Hon. R. P. Simmonds for information as to the list of trees in addition that are attacked by Canker and whether the Canker prevalent on Ma and Breadfruit is the same as that on Cacao, I have pleasure in offering the observations after consultation with the Microbiologist on the matter.

2. The most prevalent and important source of Canker in Cacao is Canker' which the Mycologist of Trindidad first showed to be due to th causing 'Pod Rot', viz.: *Phytophthora faberi* (Maubl).—

This is not known to attack any other tree in Jamaica. In Ceylon, Par and Breadfruit trees planted in Cacao cultivations have been found oc to be liable to the attack of this fungus, but no such cases have yet been Mr. Ashby in Jamaica and it may be considered that for practical purp Rot and Red Canker are exclusively diseases of Cacao in Jamaica and are pr on this species only.

3. With regard to the 'Brown Canker' of the bark and wood of C Ashby has found the cause to be the fungus *Lasiodiplodia theobromæ, Maub* which also causes the "dieback" and root disease" of Cacao.

It is not likely that this identical fungus attacks Mango, Guava and I and Mr. Ashby has not seen any specimens of the attack of *Lasiodiplodia t* on these species but he has not had an opportunity of making a special stu matter up to the present.

4. On two Estates Cacao trees have been found to be attacked by the gate Disease" of Bananas with the production of "purple canker," the having passed from the Bananas to the Cacao. This disease is caused by t "*Sphaerostilbe Musarum*" (Ashby.)

5. So far as knowledge of the matter at present exists it may be ac practically the case that the canker of Cacao is mainly a sequel to the 'Pod Rot' from Cacao trees only, in the second degree to 'dieback and roo which is also apparently a special ailment of Cacao, and lastly to 'Bonnygate from proximity to Bananas affected with that disease.

6. Mr. Ashby will investigate the Cankers of other trees and plants in as opportunity permits hut it must be expected that these diseases are, due to peculiar species living on their selected hosts."

(Sgd.) H. H. COUSIN
Director of Agricul

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FEEDING CALVES.

Jamaica is not making very much headway as a dairy c The first essential in doing a milk and butter business is to to raise your calves in addition to using the milk. Those not use true dairy methods but only take so much milk from s cows and let the calves take what is left, must surely reali while they may turn over so much money in milk, they are taking it from their calves which often are half-starved, es when they are young and cannot get along on good grass. calves when they get of an age, do eat, through the compul starvation, more grass than those that get all their mother's mi when the cows and calves get especially good feeding, the

although slow to grow sometimes at first make up a good deal of lost ground afterwafds by being greedy feeders. But how often do those who sell milk and still let the calves get all their food from the cow and what they graze, provide especially good feed for such milking cows and calves? It is hardly ever done. A something for nothing policy cannot pay in the long run. All calves, when a large part of the mothers milk is taken from them, should receive special hand feeding, and surely if 2 or 3 quarts of milk at 4d. or 4½d. are taken from the mother, one quart of grain at 1½d. should be afforded the calves, or when young, a meal made into a gruel food be given to them. All such calves should be trained to feed out of a bucket. In a true dairy business, however, the calf is separated from the mother entirely, and hand fed. The following article describes ways of feeding the hand reared calf. We have had sometimes two or three enquiries in one day as to how this may best be done.—

* * * * *

A good many now-a-days separate calves from their mothers and raise them by hand, feeding whole milk only and wholly for a time, or in part, with separated milk in part, or after two weeks or so, all separated milk. All sorts of substitutes for milk are tried, especially where whole milk can be sold readily, from the imported calf meals which are really good but very expensive, down to ordinary flour pap which is certainly not cheap, though good enough. We have raised a good many calves by hand but most have been fed milk in some part, with some combination of meals in part. But some, for test, have had no milk after a month, and we believe that we could feed them successfully, from a few days old, on artificial food without trouble from indigestion or scours.

Although we keep a few medicines always at hand, we seldom need them. We have not lost a calf and have medicined very few. Yet of the thousands of calves born from dairy cows in Jamaica and attempted to be reared during the past ten years, during which period interest in dairying or the milk trade has so much increased, good milking cows are not plentiful. There has been a great mortality; while many we have seen have been pot-bellied, with thin necks and large heads, with staring eyes, betraying every symptom of indigestion and anaemia, and such can *never* make first class dairy cows. Indeed we have known many calves, the progeny of imported deep milking cows, served by the best bulls, to turn out only average milkers, on good grain feeding too because they were half starved when young. Other cows not so well bred for milk have done as well on grass. Thus any failure cannot be blamed on the climate, the fault has been in the upbringing of the calves. Nothing at all can equally and entirely take the place of, fresh mothers milk to start with; we believe it gives a vitality that cannot be replaced. We do not believe in taking the calf away at birth; we should leave it with the mother to get its first suck, say for 24 hours at least, and better still three days until the calf milk or Colostrum has all gone. The calf can then be separated from the wildest cow if kept out of sight, and better still out of hearing also, of each other. Only patience is required. The calf after separation learns to feed out of a bucket very readily whenever it becomes very hungry. Its natural habit is to turn its mouth upwards and bump at the teats of its mother. Simply dip three fingers in milk and hold them to the calf's nose; it will smell the milk and suck your fingers; then lead its head

gently downwards to the bucket and let it suck the milk through your fingers. Do not let it gulp down the milk quickly. An ordinary calf requires at first at least 4 quarts in three feeds a day, that is, 1½ quarts every morning and evening and 1 quart at noon. At first the milk is always given at blood heat. If the milk gets cold between drawing from the mother and feeding to the calf, add a little hot water from the kettle. After two or three weeks when the calf begins to nibble grass or try a little dry food like bran, two feeds a day of milk are sufficient. A large calf, of breeds like the Shorthorn and Holstein, requires 5 to 6 quarts per day. This ration should be increased gradually to 6 to 8 quarts per day, according to size of calf and the youngster should be allowed to feed grass whenever it is able.

One of the best substitutes for milk, in part, to begin with is hay tea, where good hay can be had. One pound of good hay pressed down into a kerosene pan which is then filled up with water and boiled for at least one hour by which time it should be down to about 4 quarts or less—not more, then drained off through a sieve and half a teaspoonful of salt added, will replace 2 to 4 quarts of milk according to the quality of the hay and the amount of boiling down it receives. Imported Timothy and hay is a rich feed. Guinea grass hay requires double the boiling of Timothy to get the virtue out of it. This hay tea can also be mixed with milk, or better, take the place of one feed of milk at first. It is better to change off from milk gradually, taking a week to substitute any one thing completely for another. Yet with some calves the change can be made immediately, although there is risk. The composition of this hay tea is very similar to milk, as the virtue of the hay is got out by the boiling—the fibre and indigestible material being all then rejected. It is important to run this through a sieve and prevent hay seed and fibre being given to the calf. The hay need not be imported Timothy; Guinea Grass hay serves ; even dried hay or wire grass will do; even fresh Guinea grass will do, but then less water is needed for the boiling, say 6 to 8 quarts only need to be added to be boiled for an hour down to 4 or 5 quarts, and here a teaspoonful of Bi-carbonate of Soda requires to be added to 4 quarts of the tea. Calves differ and if this hay tea disagrees at first, then change very gradually. The state of the bowels is the index to proper feeding.

Almost any cereal food well boiled and sieved until a thin pap is got, will also substitute milk.

Oatmeal is by far the best, followed by wheat middlings, common wheat flour, and even bran tea, but the latter needs as much boiling as in making hay tea.

In all foods, however, the calves will not have the bone and make the flesh unless the food is well balanced, nor will they have the full vitality necessary to be healthy, large, deep milking heifers if there is not enough protein and fat in the food. A Veterinary Surgeon here once raised a calf very well on green bananas chopped up, boiled soft and then the liquid drained off. The calf was sold to a dairy and gave a yield of 12 quarts of milk at 3 years. Yet the banana pap was an incomplete food dietically and scientifically. It would have been a better calf (in all probability) on a more complete milk substitute. It probably pulled along fairly well through the period when liquid food was an absolute necessity, and then made up for it on dry foods, as it got plenty of these after the first two months, we were told. Milk contains 87% of water, 3% to 6% fat 3½% protein

(or flesh formers), 4½ Carbo Hydrates (starch and sugar) and a trifle only of waste. But the fact that a vigorous calf, even on whole milk, passes a considerable quanitity of excreta shows that there is waste, that all that is in the milk is not completely digested. All the vegetable foodstuffs contain a large amount of waste, but when boiled in water and sieved, the resulting fluid contains little waste, and at any rate the calf's stomach soon accommodates itself so long as the food is of an easily digested nature.

The banana pap was very much lacking in protein and fat. All the cereal paps are lacking in fat, but this can be easily added in the shape of a teaspoonful of coconut oil made into an emulsion first. The fat and protein to balance the meals used is usually obtained in patent calf meals by adding a proportion of linseed meal—this has to be imported here and is expensive. We have found that it can be replaced satisfactorily by coconut meal, although the latter requires more cooking as it contains (in theory) more indigestible fibre. The present calf meal we are using contains at first for young calves 4 parts of banana meal and 1 part of coconut meal; later 3 parts banana meal and 1 coconut meal, and costs 2d. per lb. Calves fed on 2 lbs. of this in gruel or pap and with abundance of fresh grass they can get on common, but not Guinea Grass—gain weight on this food at the rate of over 1 lb. per day. One lb. of this mixture makes 4 quarts of artificial milk. For young calves, the meal is boiled in sufficient water into a pap, for 20 minutes, then hot water poured on it over a sieve to make up so many quarts of thin gruel.

The following comparative analyses may be of use to those readers interested in raising calves without milk:—

	Water.	Protein.	Fat.	Carbo-Hydrates.	Waste.
Milk	87.4	3.6	4.	4.6	—
Banana Meal	5.6	3.3	1.73	82.4	1.74
Coconut Meal	9.0	19.35	9.14	48.5	8.64

Coconut meal is very little if at all inferior to linseed meal and cotton seed meal, and it is cheaper; it is equal to gluten meal in every way. It has too much fibre to use without thorough cooking and sieving for very young calves. After two months they can be fed on it just as it is, along with crushed Corn or Guinea Corn as a dry food, still keeping up the liquid food. Bran and crushed oats make a better feed than Corn or Guinea Corn but the coconut meal with any of the latter makes up a good ration. It is likely that rice bran which can be got here can be used largely in a calf (or dairy cow) ration and it is cheap. But it needs careful experimental trials.

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Since this was written the calf receiving a fairly regular supply of separated milk, 6 quarts per day, but if less, calf meal added, has forged ahead of the calf receiving only the calf meal, so far as appearance goes.

It is not supposed that banana meal and coconut meal are available here as yet, as they should be. The object of the experiment was to show that a combination of what ought to be two common native products is quite as useful as any combination of imported foodstuffs for calves.

CORN CROPS.

The two chief parishes for the production of corn have always been St. Elizabeth and Manchester, followed by St. Ann. These three parishes were always known as the corn-growing parishes wth St. Elizabeth as the first parish. And in St. Elizabeth, the Pedro Plains and the districts in the South-east were places where corn was grown by almost everybody, so that in the average years many thousands of bushels were available for use out of these districts, and were often sold as cheap at 1/6 to 2/-. Central St Elizabeth up to the railway, followed with a large production also. Now the first named part--Southern St. Elizabeth— hardly produces any corn; since 1907 there has been a series of years of drought and that part has not even been able to supply itself with corn. Central and North Central St. Elizabeth have usually had a large production, but Manchester became the chief corn parish.

Of late years other parishes have been growing more and more corn, and we think that without being accused of any self gratification, this has been due to the operations of the Agricultural Society; the JOURNAL and its continual articles on the subject, making good seed corn available to everyone, the Agricultural Instructors constantly advocating the growing of corn by better methods, and the Branch Societies discussing the subject. It has always to be borne in mind that in estimating the crop of corn a great allowance has to be made for the amount consumed at home from the milk stage on, before the corn is reaped at all, and after that each grower keeps a certain amount of corn for use in the home and for his stock. It is therefore difficult to estimate what may be available for sale.

Owing to severe drought in Central St. Elizabeth on to the Southeast of that parish, there is a large reduction this year in that parish. The crops available for market are estimated at only 10,000 bushels, instead of as in the last two years 40,000. On the other hand, Manchester's estimate is about 40,000 bushels, Clarendon 15,000, as there have been good seasons in this parish and larger crops than have been known for 10 years have been grown in the lowlands. We think this under-estimated. St. Catherine has not so much as last year and the estimate is only 5,000 bushels. We think this also much underestimated. St. Ann has not yet come back to its old production and the estimate is only for 20,000 bushels. Westmoreland's estimate is only for 3,000 and yet it has grown more corn these past few years than before. It has long headway to make up before it can be called a corn growing parish. Trelawny's production is said to be about 5,000 bushels altogether which is not bad. St. Mary will have about 5,000 bushels; some large proprietors there are now growing their own. The other parishes do not count for much but St. Andrew is growing more and more corn now.

The total corn crops which may change hands, that is, is sold from growers to consumers (quite a different thing from the total crop reaped) should be about 100,000 bushels. We think these figures are all much underestimated this year.

We import from 240,000 to 250,000 bushels of corn a year costing us from £44,000 to £52,000 a year. There is therefore plenty of room for the expansion of corn growing to cut into this £50,000 worth. And after that we have still to start out to grow enough of a high class grain to make our own cornmeal of which we import from 45,000 to 90,000 barrels at a cost of £35,000 to £78,000.

KEEPING CORN.

We have often given our opinions and experiences in preserving corn and other grain from attacks of insects by the use of Napthalene. We now give as the result of practical tests carried through in Queensland in 1914:

"A comparison of all the results recorded above shows that storing with napthalene is practically as effective as fumigation with carbon bisulphide, that is had no bad effect on the grain from the point of view of its suitablilty as food for cattle, and also does not alter the germinative capacity to any appreciable extent. It is therefore a much more suitable compound to use for preserving grain than Carbon bisulphide, its advantages over that insecticide being:—

1. It is quite easy to use. Carbon bisulphide is an extremely volatile liquid, and the vapour when mixed with air forms a very explosive gas. This necessitates extremely careful use, as in inexperienced hands it may provè dangerous.

2. No special apparatus is required, the only precaution necessary is that the napthalene should be enclosed in a muslin or some such porus material to prevent it becoming mixed up with the grain. With carbon bisulphide a special fumigating house is essential, and this is costly to build.

3. The effect is continuous, as the napthalene is stored along with the grain. The effect of fumigating with carbon bisulphide is to kill all the insects, larvae, and eggs in the grain at the time, but after fumigating the carbon bisulphide must be allowed to evaporate and any insects which found access to the grain could breed unchecked. The effect of the napthalene is constantly to keep the insects in cheek.

The use of napthalene, then, is a simple way in which grain kept for fodder and for other purposes may be preserved from damage by insects, the only things to be remembered being that the napthalene should be prevented from becoming mixed with the grain, by enclosing it in muslin, and that the grain should be exposed in the sun for from six to twelve hours before feeding to the cattle.—*Queensland Agricultural Journal.*

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GUINEA CORN.

From the middle of August to the middle of September is a good time to plant either the White or Red Guinea Corn, the earlier the better, given sufficient rain to start growth. The White Guinea Corn is by far the most prolific, but as it only heads about January no matter when planted during the preceding year, the Red variety which matures in four months comes in handy during the year. Not only is the White Guinea Corn the most prolific in grain, but it gives a larger amount of herbage than the red, grows more vigorously, that more green feeding is available from it. At the Hope Stock Farm this Guinea Corn is largely grown, is cut and stored in a *Silo*, so that later on during the year this green juicy stuff is available for feeding cows and is of course especially useful during a spell of dry weather when grass may be dry or scarce. But Silos are not available to others who may yet find themselves in the position of having a glut of green feed in December and January from their Guinea Corn, yet may be fairly certain—from previous experience—that later on they will be a scarcity of forage through dry weather.

In old times when Guinea Corn was largely grown in Vere and in Northern St. James, we are told, planters used to store the dried stalks and leaves, as hay, and this is commonly done wherever Sorghums are grown. The stalks were cut when heading, spread as it was cut, dried a day, then put in small heaps which were turned over every day dried a day in the hot sun, then put in small heaps which we turned over every day until the whole was dry and smelled like hay. Then these heaps were piled into small stacks, and lastly carted away to the yard and built into large stacks which were then thatched over to keep them dry. This Guinea Corn Hay makes a good standby in times of scarcity of grass in the fields. To make it more palatable when fed at first, some molasses may be sprinkled over it.

* * * * *

What we call Guinea Corn belongs to the family of Sorghums, and there hundreds of different varieties grown throughout the tropical sub-tropical and warm temperate parts of the world, whenever there are dry conditions of climate. From its name, no doubt our Guinea Corn came originally from West Africa. In South Africa there are Red and White varieties of Kaffir Corn. In East Africa varieties with a plumper grain, very quick to grow, known as Dhurra. What we call Red Guinea Corn here is Dhurra.

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SELECTION OF CORN.

When the corn crop comes in and the cobs are beginning to dry on the stalks, then is the time to go through the field and select you seed. In fact any man who takes interest in his corn and its improvement to suit his own circumstances, should go through his field pretty often and mark the best stalks, and the best cobs on these stalks, to be kept for seed. It is not always, however, the biggest stalks that yield the best cobs. Our corn is so mixed through so many different varieties having been brought in from the United States and mixed with our native red corn, that in the field many different types are to be seen. Those who depend upon corn stalks to some extent for feeding beasts, will probably think that a large growing plant suits them best; but those who only grow corn for grain, and who are in any way troubled with breeze laying their corn low, should select the short stout type of corn, with the cob borne low on the stalk. We mentioned in a previous JOURNAL that we once had such a corn—the stalk did not grow tall, nor thick, but there was a good cob, sometimes two, borne from 1ft. to 2ft. from the ground, and this kind of corn could be planted close in the row so that its production per acre was fairly high. We have hopes that we can again select this type, but of course it takes a good may seasons of selection to make the type come true.

The stalks selected for seed should be left until they are thoroughly dried, then the cobs should be picked, the husks folded back, and the corn hung up in a cool airy place to keep, and these cobs need not be shelled until the next planting season. One thing is necessary for all seed cobs, and that is, to see that there is as little pith as possible. The cobs may be very large to look at, but the proportion of grain to pith or cob, is a good test; and all the cobs selected should be filled up to the top.

PLANTING OF CORN.

In the planting of corn for the fall crop, there are different methods of preparing the land. Some of the larger planters are able to plough and with the use of horse implements they bring the cost of cultivation down to a very low point. We have heard of some planters who are growing corn on a rather large scale at 10d. per bushel from planting until the grain is ready for market, and 1/6 per bushel is not uncommon. The bulk of the smaller corn growers must, however, use hand implements. Some fork the land right through, some only fork holes, but still the majority adhere to making chop holes with a hoe, 4x3, apart planting 5 or 6 grains to the hole. If good seasons prevail, and the soil is good loam like the red soils, the chop hole method does fairly well; but on clayey soils, or where good seasons do not prevail, the slightest dry weather, say 10 dry days in succession, dries out the corn. We have also heard of poor results from corn planted on forked soil, and we generally found on investigation that this was because when planting the soil was not firmed. We have often explained that there is a great difference between making the soil soft and fine, and having a firm seed bed. If the seeds are dropped into loose soil, the dry air can penetrate and dry out the soil, whereas what is wanted is for the soft, fine, moist soil to be pressed closely against the seed so that the corn grain quickly germinates, and when the fine rootlets start out they are in close contact with the soil which provides their food material, yet they have not to lose time and strength trying to bore through hard clods. When the seed is planted therefore, the soil should be firmed down, and after planting, the earth on the top of the seed should be firmed. In countries where horse implements are constantly in use and wheat, corn barley and oats, are grown on a large scale, the fields are rolled with a heavy roller to firm the soil. If with hand labour this is usually done here by the foot or by the hoe.

Owing to there being so many enemies to corn and Guinea Corn in the way of ants, mice, rats, sometimes birds, and it is stated also frogs, it is necessary to treat the seed before planting, and we know of nothing simpler or easier for the ordinary man, than passing the seed through a paste made of kerosine and wood-ashes. The seed does not need to remain in this paste any time—simply shaken through in order to be coated with the mixture. This practice, however, only preserves the seed until it has germinated and the young plant has shot above the soil; it does not preserve the young shoots from the attacks of cut worms. These cut worms are a kind of small caterpillar which during the day lurk in the soil or in rubbish, crawl out at night, and slice the young plants right through. The plants can be dusted with Slug Shot but this preparation is more meant for use in gardens, and a cheaper preparation would require to be used in fields of corn.

Baits made of cornmeal and Paris Green can be laid through the field and if placed in bamboo pots or old tins, birds will not get at the baits. It is likely that some of the proprietary soil disinfectants such as we mention in this JOURNAL will kill these pests if applied round the young plants, but we are afraid the application of such would be too expensive.

Later on, caterpillars attack the corn and these have to be fought. Paris Green diluted with 20 parts of lime can be dusted on, but we have a higher opinion of Arsenate of Lead which sticks better; it has yet to be proved by experiment whether the powder form of Arsenate of Lead dusted on, or the paste form mixed with water and sprayed on with a small hand spray pump, would be the most economical and effective.

It has often been advised to plant only 3 seeds a hole and these not close together dropped carelessly, but placed in the form of a triangle, with as much space between as the hole will admit. But now-a-days with so many pests, causing loss of young plants, and so much re-planting to be done—when the later plants hardly ever do well as those that got the start—we prefer to plant 5 grains per hole and go to the trouble of taking out the weakest if they all happen to grow.

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SELECTION OF COCONUTS FOR PLANTING.

A good many owners of estates who planted coconuts in the past, planted any kind of nut from any kind of tree as was convenient, and gave very little attention in the way of cleaning and cultivating. Of late years there has been some selection of seed, and every year sees a fuller realization of the very great importance of choosing seed nuts of good size, from the most productive trees; productive, not because they are standing in especially rich soil or where they receive doses of manure, but because they are outstanding trees amongst others growing under the same conditions. There are also usually districts or localities where trees appear to bear nuts that make better seed than in other localities,and the young trees grow with more force or vitality. We have noticed this for years.

There was an interesting article in the Kew Bulletin No. 2 of 1915 (part of which was reproduced in the Agricultural News (Barbadoes) of May 8th.) This article was written by Mr. Crum Ewing of Glasgow, who owns Caymanas Estate here (about 500 acres sugar, 600 acres bananas) and also Estates in the Island of Nevis and in Demerara. In throwing up the Sugar Estates in Nevis in 1907, Mr. Crum-Ewing asked us to procure the best seed coconuts we could get for him to plant on the old cane lands in that Island. We took a good deal of trouble in getting the nuts and in insepcting them. There was very little loss of nuts on their arrival at Nevis. This is what Mr. Crum-Ewing says:—

The number of nuts planted up to the end of 1911 amounted to 10,305. The trees are planted 28 feet apart, or fifty-two to the acre. Certain trees commenced to bear in 1911, and Mr. Crum Ewing saw one early in 1912, four years four months old, bearing forty nuts. Reaping in any quantity, however, did not commence till 1913, when the 1907 plants would be about five years three months old.

From January 11, 1913, to June 30, 1914, the number of nuts harvested amounted to 23,807. From January 11 to October 23, a 4-inch gauge was used which resulted in 77.4 per cent. of selects and 22.6 per cent. of culls. Both selects and culls were sent to New York, where the market took both grades as select, paying $42.50 for 1,000, about the highest price which has been paid for any coco-nuts in that city. Since October 23 a 3 7-8-inch gauge has been used (which is 1-8-inch larger than the Malay regulation gauge of 3¾-inch), and of the 75,116 nuts gathered, 68,419, or 91.08 per cent. have been select, and 6,697 or 8.92 per cent. have been culls. A selection is made in the field of the nuts while in the husk, and it is found that 95 per cent. to 98 per cent. of these nuts when husked are over the 37-8 gauge. . . .

Out of 1,000 seed nuts sent to Demerara in July 1913, it was reprted on February 28, 1913, that 89 per cent. of these had germinated, that the others seemed quite good, and that more were expected to grow. In March 1913, fifty nuts were planted standing up and fifty on their sides by way of experiment in Nevis. On October 24, 1913, it was reported that out of the fifty on their sides forty-six, or 92 per cent. had germinated, and of those standing up only theirty or 60 per cent. had germinated.

The high percentage of good-sized nuts on the young plantations at Nevis is of both general and commercial interest, and affords ample justification for the great trouble which was taken in selecting the original seed nuts in Jamaica and elsewhere. As to the selection of the seed, Mr. Crum-Ewing writes: 'I do not understand *Simmonds's advice to take seed nuts from clusters containing few fruits—on a prolifi* tree there should be no such clusters. I quite agree with you that seed nuts should be taken from trees whose good character is well marked. It appears to me that the pedigree of a coco-nut tree is of the utmost importance. Even if I had one or two years' experience of a tree, and it showed the same characteristics, for which its parent, and yet again its grand-parent had been selected, I would rather use the seed from that tree than take Simmonds's advice to choose one picked from a sparsely furnished cluster grown on a tree passed the middle age, of whose parentage there was no record.'

The nuts which are now being planted on Mr. Crum-Ewing's land in Nevis and in Demerara are taken from the young trees planted in Nevis in 1907. As already mentioned, the germination percentage of the nuts sent from Nevis to Demerara in July 1913 was 89 per cent., which certainly refutes the statemtn made by Simmonds that nuts from young tree 'rot away at the eye.' Mr. Crum-Ewing informs us that he is planting nothing but his own Nevis seed both in the island and in Demerara, and adds: 'I feel justified in so doing, knowing the great care with which the seed is selected, the minute observation to which the individual trees have been subjected, the absence of disease in the grove and in the Island *and the good stock from whlh the parents and grand-parents were derived.'*

These experimental plantings should, in the course of a few years, enable a proper estimation to be made of Simmonds's statements, but in the light of the practical experience already gained, it seems highly unlikely that his recommendations will receive support.

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Mr. Crum-Ewing's reference to Simmonds, refers to the statements in Simmonds' Tropical Agriculture, as follows:—

"The nuts for sprouting should be chosen from those fully ripe, having full, large eyes, and such as have been gathered from trees past the middle age—not, however, from aged ones—and from clusters containing few fruits. . . . Those nuts which may be taken from trees of immature age, will, if planted, rot away at the eye; and the plants, if any be successfully reared, on transplanting will grow very rapidly and acquire bulk, but the fruit will drop before the kernel acquires consistency, the root stalks break, and the trees entirely fail before mid-age.

Efforts have been made to discover what truth there may be in the above statement, for neither direct confirmation nor absolute refutation has been obtained. On physiological grounds there would appear to be no justification for the statement as it stands, though no doubt it would be unwise for more than one reason to plant nuts from young trees in the first year or two of their coming into bearing."

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We do not think that there is anything in the statement that nuts from young trees rot away; they grow very well, but our aim would be to select nuts from mature trees if possible.

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A USE OF SEA ISLAND COTTON.—Sea Island cotton finds an important use in the manufacture of motor tyres. The *Times* contains a striking advertisement notifying the fact that the Goodrich Co., Ltd., entirely uses Sea Island cotton as the fabric for the foundation of their tyres. It is stated: 'there is as much difference between the value of the best cotton and the worst as there is between cotton and silk. The very finest cotton is the true Sea Island variety. Its quality in length and fineness of staple is extraordinary.' The above advertisement is one of the first that has been noticed in regard to the virtues of Sea Island cotton. The best Sea Island cotton in the world is produced in the Island of St. Vincent in the West Indies.

COWPEAS.

A correspondent wrote the other day: "I now understand that allowing the peas to ripen and picking them does not interfere with the nutritive powers of the peas as a green dressing. In your JOURNAL you have always advocated the cutting down of peas when flowering, to be turned into the soil; but if we can grow the peas and get same as food without interfering with it as a green dressing, you can quite see the benefit.

I shall be glad to hear from you if this is correct."—C. H. L.
Morant Bay.

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It surely is obvious that taking away the mature Cowpeas, which are the quintessence of the plant, to the extent of 10 to 15 bushels per acre, weighing 60 lbs. to the bushel, and which are rich in nitrogen, must take a large proportion of the nitrogen from the soil that the Cowpeas were purposely grown to add. If on the other hand the Cowpeas are cut down when in blossom, or just setting pods, just when the whole powers of the plant are concentrated on making seed, then all the nitrogen which is the most valuable element would be added to the soil. The Cowpea in common with other legumes has the power of absorbing nitrogen from the air; it does not add potash or phosphoric acid to the soil, except that legumes are as a rule vigorous growers and deep-rooted and may utilize stores of potash and phosphorus which more superficially rooted plants would not get at—and thus legumes make these plant foods available, for crops, say bananas.

The planter must calculate whether adding so much nitrogen to the soil for the benefit of his bananas, or selling his Cowpeas, will pay him best. He does get some benefit in additional humus added to the soil from the dry vines and roots of the Cowpeas together with a modicum of additional nitrogen no doubt but all the Cowpeas sold off the land represent so much available fertility lost to his bananas or cocoa or other staple crop.

It has been estimated in the United States that one average acre of Cowpeas contains 65 lbs. of nitrogen, 111 lbs. of potash and 20 lbs. of phosphoric acid; of this the roots and stubble contains 8 lbs. of nitrogen, 18 lbs. of potash and 13 lbs. of phosphoric acid. A fair crop of 12 bushels of dry peas weighs 720 lbs. and of this 18 per cent. or 40 lbs. is nitrogen. You get therefore 8 lbs. of nitrogen in the roots and stubble left, and 17 lbs. in vines and you lose 40 lbs. in the peas taken off. You also, however, lose potash and phosphoric acid taken off in the peas: viz., 93 lbs. of potash, 7 lbs. of phosphoric acid, according to these figures. Adding a fertilizer especially made up for Cowpeas, to the soil when planting the Cowpeas would enable a crop of peas to be taken off and still benefit the bananas.

A fertilizer for Cowpeas, as laid down in a treatise of the United States Department of Agriculture, should contain about the following proportions:—8 per cent. available phosphoric acid; 6 per cent. actual potash, applied at the rate of 400 to 500 lbs. per acre. Nitrogen is not needed for this crop, unless the soil is so very poor that the peas start off with a very weakly and sickly looking growth. This condition would require about 75 lbs. of nitrate of soda added to the soil per acre.

OVERLOOK BEANS.

Of late years, this bean (botanically *Canavalia Ensiformis*) and called also here Cut Eye Bean; and elsewhere Sword Bean, Jack Bean, Jamaica Horse Bean, etc.) has come into common use as a cover crop and green dressing for bananas, and in the parish of St. Mary is probably now grown as commonly as Cowpeas. But when other local food crops are scarce, the heavy growth of Cow peas can be allowed to bear instead of being turned in as a green dressing and a large amount of foodstuff be made available; the Overlook Bean however at present is not used at all for food, either for man or beast. It is a pity because the plant is a powerful grower suitable for the heaviest clay soils, standing continuous wet weather and long dry weather alike, and is most prolific. Very large crops of beans are available or could be made available at a cheaper price per bushel than any other legume and if it were found on trial that they are suitable for feeding horses and mules, they would be an economical addition to a diet of grass and corn for these animals.

Sloane, the great botanist, considered this bean indigenous to Jamaica, but it is also known in West Africa.

It is generally thought here that these beans are poisonous, but that is not the case. The beans can be eaten by human as well as animals, and old people who have called in this office have told us that they have often cooked and eaten them. In this JOURNAL for Septemher 1913 Mr. Arch. Spooner wrote an experience of this bean in Antigua.

Although we usually try most products experimentally we have not had any horse, stock or poultry that we wanted to experiment on. It does seems strange that we have to go to other countries to get information on the edible qualities of this bean, which is so common in Jamaica.

In the Agricultural *Gazette* of New South Wales the following appears:—

"*The result of this last crop was reported on by Professor Tracey, as follows:*— "The 'Jack Beans' yielded 30 to 40 busbels per acre. We have used the beans this winter in feeding steers, cows and hogs, and I am greatly surprised to find them of almost no value. Cattle soon learn to eat the meal made from the beans, but it appears to be very difficult of digestion. We have used it constantly for ten weeks until yesterday, when I decided that there was no occasion for any further work. *Next week I shall commence feeding the cooked meal, and if I get satisfactory results* from that, shall try cooking some of the beans also."

In a report on feeding experiments in the Southern States it is stated:—

"While grown to some extent in the Southern States, the plant does not appear to thrive as well there as here, and no extensive feeding experiments are reported.

The bean-meal is said not to be very palatable or digestihle for cattle, but this may be due to a too limited experience in its use.

The early feeding experiments with the green fodder in Hawaii gave similar results to those reported above, but as feeders gained in experience the fodder was found to be both palatable and nutritious for dairy cows as well as swine.

As with most new feeds it is important to use in the beginning only a small proportion of the new feed in the accustomed ration, and then increase the proportion gradually. The Dowsett and Pond Dairies have fed green 'Jack Beans' and sorghum in equal proportion to dairy cows with excellent results.

The crop requires about a montb longer to mature than do cowpeas, hut the yield is proportionally greater. Yields of 16 to over 20 tons of green fodder per acre have been reported from various sources.

The best yield of seed reported is 1,020 lbs. per acre."

WASTES.

There is a tremendous waste going on in Jamaica, the greatest being that of the material gained from the soil. We ship away every year between twenty and thirty million coconuts, from ten to sixteen million bunches of Bananas, forty-five to seventy hundredweight of Cocoa, from sixty to ninety hundredweight of Coffee, about twenty-five hundredweight of Ginger, from two hundred to four hundredweight of Sugar, hides over five hundred thousand pounds wieght, and goat skins over one hundred and fifty thousand pounds weight.

These are the exports which chiefly cause loss of fertility. There is not so much loss from the pimento, logwood and other dyewoods exported. The most wasteful loss of all is not from our exports, however, but from the blood and bones of the cattle, pigs and sheep slaughtered at the various slaughter-houses, but chiefly in Kingston, where 10,440 of these animals are slaughtered every year. Imagine the loss from the blood of these animals and the contents of their stomachs, which, we understand, are thrown into the sea to pollute the water and encourage sharks. The average weight of a cow or steer slaughtered is about 500 lbs., and the blood and bones represent 60%. of the total wieght. While there is a great loss in our not having manufactories, chiefly connected with Agriculture, established here, such as Coconut Oil mills to express the oil from the small nuts, to be used instead of Cotton Seed Oil, and for making soap, the residue of the Coconut to be used for feeding stock; and in all the hides of cattle slaughtered not being manufactured into leather here, the loss of blood and bones is local, and is a loss which would not be difficult to stop. Dried blood and bone meal are rich and costly fertilizers.

Bones contain about 3 per cent. of nitrogen and 25 per cent. of phosphoric acid and requires to be ground into a fine powder to be of full use as a fertilizer. It requires, however, very powerful machinery to crush some kinds of bones, such as the shanks, skulls and shoulders. Fertilizer manufacturers use sulphuric acid for reducing the bones bnt this is a highly dangerous acid only to be used in a properly fitted up place and by a properly qualified person to handle it. But there would be none here for a small company to handle such kinds of utter waste and make something out of them.

Another waste is the corn cobs when the grain is shelled out. These are usually thrown away. If the whole cob is ground up into a meal, grain and cob together, the combination forms a good food for working mules, and forms part of the ration of dairy cows. There are special mills to grind the whole cob.

———:o:———

COFFEE.

While we are doing a great deal for the extension of cocoa-growing through the Department of Agriculture having established Nurseries in different parts of the Island, the plants being raised from selected pods taken from selected trees on selected plantations, the young plants being sent out under the auspices of our Agricultural Instructors who are thus enabled to impress the importance of careful planting and careful attention on growers, we are not doing the same thing for coffee. Of course coffee plants are so hardy that they grow under the parent trees readily, and so some kinds of plants are available, whereas young cocoa plants do not grow under the old cocoa trees

except in rare places. Then again a good many experiments have been carried through in manuring cocoa in Trinidad and Dominica, and we have the advantage of the results of these if we desire to apply the same practices for experiments here, but little knowledge is available of the results of using fertilizers on coffee; indeed little knowledge of any experiments with coffee is available.

The planting of coffee here is even yet generally done in the crudest way possible, long spindly suckers are wrenched up from some thicket of coffee trees, carried by hand or on donkey-back, the roots exposed to the sun, then they are stuck in small holes, without any cutting back, or any trimming whatever. It takes a hardy plant to stand this treatment and grow: young cocoa plants cannot be treated so roughly or they would not grow. If seasons are favourable they young coffee plants grow but take a long time to make a good start and they seldom form shapely trees. If good coffee nurseries could be established in coffee districts, the young trees carefully grown from the best seed and distributed with care, so that the roots do not get dried out, then lessons given in careful planting at suitable distances apart, our coffee industry might be extended very largely with a few years, as much planting might be induced on lands settled only of late years.

It is common now to see good cross trenches on the hillsides where cocoa is grown, but it is the rarest thing to see any such trenches or drains across the steep hillsides where coffee is grown, even on the stiffer soils. The necessity for the one is as much as for the other, indeed more, as coffee is grown on steeper hills in cooler altitudes. It is not yet realized that cross trenches are useful even on light lands not so much to drain the land as to prevent wash.

Cocoa is now being really cultivated, not simply left to grow: it is pruned, trenches (or drains) put through; the soil between the trees forked, usually pricked forked, not to tear up the roots; in the drier parts it is often mulched with cut grass, banana trash and other waste vegetable material; it is planted through with legumes, chiefly Cowpeas and Overlook Beans for green dressings, that is to add humus to the soil, as much animal manure cannot be got. Little of such trouble is spent on coffee, usually only rough pruning, if any, and weeding. Even in Costa Rica where the soils are much richer than here and where the coffee trees grow very luxuriantly, green dressings are now being applied. We have shipped Cowpeas, Overlook Beans and Jerusalem peas to Coffee growers there to try.

It is a certainty that what applies to other economic trees applies to coffee, if good crops are to be secured, (1) each tree must have "elbow room", not be crowded; (2) must be pruned, to leave only the best bearing branches; (3) the soil must be opened up at least one yearly by forking; (4) on stiff soils and all steep hillsides cross trenches must be put through, and (5) manure in some form must be added, preferably animal manure if enough can be saved, and if not, cut grass, bush, or when the plants are young and the rows between fairly open, Cowpeas can be grown. Cowpeas, etc., will not grow in the heavy dense shade of thick coffee.

We have always exported more value in coffee than in cocoa and our upland districts have always largely depended upon coffee for their living. Now-a-days with the banana trade extending its operations even to mountain parts, there is a fine opportunity to

plant more coffee where bananas are being grown over 2,000 feet. But the first thing to be careful about is to select sturdy young coffee plants.

In 1913 we exported of coffee value £158,578 and of cocoa £114,738 In 1914 the relative values were coffee, £166,140; cocoa £153,033.

We have always insisted through this JOURNAL and by correspondence, that bananas should not be depended upon as *a* crop, that is the only crop or means of living, but the opportunity of the trade in bananas be taken to use these plants as a cover crop for growing cocoa in the lowlands and coffee in the uplands.

———:o:———

LOCAL INDUSTRIES.

We certainly need industries here other than agriculture but closely connected with it; otherwise there will continue to be great waste and great loss. Unless we can utilize some of our products locally of which there are useful and necessary bye products, we shall continue to sell some of our staple products cheap, and buy back some bye-products of these or other similar articles used for the same purpose, dear.

For instance we exported Coconuts in 1915 value £123,049. We import of Cotton seed oil for cooking purposes £22,318; we also import cotton seed meal for feeding cows and as a fertilizer, and could probably make use of a great deal more of it, if it were cheaper. We ourselves import and use Coconut Meal for helping to feed calves. If this was available, large quantities would be used for feeding horses, cows and pigs chiefly. Is it not plain the great loss we suffer from not having oil mills to express the oil from our coconuts to be used locally for cooking, and perhaps for making soap, and have the coconut meal available for our stock. *But, and this would be the greatest advantage, in our* opinion, we would gain all the manurial value of the coconuts by having the coconut meal used here. Last year 29 million coconuts were sent away representing a tremendous loss to our soils.

We export hides to the value of £23,000, goat skins to the value of £14,336; and then we import leather to the value of £13,000, and boots and shoes to the value of £81,219. All hides and skins could be made into leather here, and at least the coarser type of boots and shoes made here. At present both leather and boots of good quality are made here to a very small extent only. With a proper apprentice system thousands of pounds worth of leather and boots could be made employing hundreds of efficiently trained men and women. We only mention these products: there are others. Would it he possible to organize industries here? We know that attempts have been made before and ended in failure. We have been writing on the same subject for 15 years ourselves. But they ought to be Island projects, not little try-to-get-quick-rich schemes which usually turn out badly.

———:o:!———

TO KILL WEEDS IN THE WALKS.—Various Chemicals act effectively on rough leaved weeds but have little effect on pure grasses especially on nut grass. A strong solution of sulphate of copper, half a pound to a gallon of water sprayed on the walks will kill weeds. So will dilute sulphuric acid, but it must be used with caution. So will a solution of Arsenic. Some of those who spray cattle with an arsenical spray, find that the grass where the cattle stand gets killed out by the drip. Nut grass is hard to kill as the grass grows from a little bulk deep down in the soil. It takes repeated applications to kill this grass.

SEA ISLAND COTTON:

Although the market for all cotton became very depressed immediately on the outbreak of the War, and it was expected that cotton would hardly sell at all, still prices turned out not so bad as we expected for Sea Island Cotton, and all of what was sent from Jamaica sold at a fair price, over 1/- per lb., perhaps 3d. or so lower than previous prices. There was no planting last August and this year no one has made preparations to plant, while because of the high and certain price of sugar and the magnificent seasons the districts have been blest with, everyone in the districts where cotton was most largely grown, has been putting in cane as much as possible, and cannot "bother" with cotton.

However, prospects for Sea Island Cotton are good.

The following circular has been addressed to the Hon. Francis Watts by the British Cotton Growing Association, a copy of which we have received.

DEAR DR. WATTS,

In reply to your letter, I am writing fully to explain exactly how the guarantee from the Fine Spinners' Association is to be worked.

1.—The guarantee applies to all good, clean, merchantable cotton grown in the British West Indies in the season 1915/16—*i.e.*, sown in 1915 and shipped prior to, say, June 30th, 1916.

2.—The Fine Spinners' Association will purchase, on arrival in Liverpool, all such cotton. Payment to be made in cash. This secures immediate sales.

3.—The prices will be fixed on the following basis:—

St. Kitts, best quality	18d.
St. Vincent, best quality	18d.
Other Islands, best quality	14d.

St. Vincent superfine will be sold on a separate basis, and, of course, at higher prices.

4.—Standard types have been selected for each Island, and the above prices will be paid for all cotton equal in quality to the types. All good, clean, merchantable cotton will be accepted even if inferior to the type sample, but with a corresponding difference in price—*i.e.*, a lower price will be paid for inferior cotton. Mr. Wolstenholme will act for the British Cotton Growing Association and for the planters and shippers in arranging these differences, and, in case of any dispute, the matter would be referred to the Liverpool Cotton Association.

5.—*Stained or dirty cotton will not be accepted under this guarantee, but* will be sold separately on its own merits.

6.—Any planter or shipper wishing to take advantage of this guarantee must undertake to ship the whole of his 1915/16 crop to the British Cotton Growing Association, and such undertaking must be delivered to the British Cotton Growing Association *not later than August 31st, 1915.* The terms of this guarantee will not apply to cotton forwarded by planters or shippers who have not given the above undertaking.

I think the above should make matters perfectly clear, but if there is any doubtful point please let me know and I will have it straightened up, for I can assure you Mr. Dixon is really anxious to help, and only wants to do what is right and fair, and he assured us that if any appreciable advance should take place in the general Sea Island market, owing to the early termination of the war, the Fine Spinners' Association would take this into favourable consideration.

I should also make it clear that ir is a purely voluntary agreement. It is quite open to any planter to come in or not, but it must be all or nothing. It would not be fair to the Fine Spinners' Association for planters to wait and see how the market is going, and if the market drops to pile the cotton on to them, and if it goes up to sell their cotton elsewhere. The Fine Cotton Spinners are offering a very fair price as things are, and are quite prepared to run the risk of the market, but it must be clearly understood that each planter who wishes to take advantage of the offer, which insures prompt sales for cash at fair prices, must give an undertaking not later than August 31st next. If any planter likes to chance it, and run the risk of the market in the hope of higher prices, he has no need to sign any undertaking, but we cannot hold out any great hopes of prompt sales for cotton shipped outside the agreement.

I enclose copy of the undertaking which we should require signing, and I should be much obliged if you would telegraph us on receipt of this to say if everything is quite clear and in order. If so, I propose to send a copy of this letter to each planter and shipper, together with an undertaking, which is to be signed and returned to us by all who wish to take advantage of the Fine Cotton Spinners' guarantee.

Yours faithfully,
J. ARTHUR HUTTON,
Chairman.

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COST OF PRUNING COCOA.

The constant question asked me is: "What should be the cost of pruning Cocoa." I have figures to hand that Cocoa can be pruned not surgically treated or treated with simple sanitary measures, very efficiently at a cost of 12/6 per acre per annum which is exactly one penny per tree per annum or about the value of three pods per tree per annum. This should prove the economy of intelligent labour when bestowed on Cocoa plantations from their youth up.

W. CRADWICK.
Agricultural Instructor.

Highgate P.O.

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COCOA COMPETITION.

RULES OF THE ST. MARY COCOA CULTIVATION COMPETITION, 1916.

Prizes given by the St. Mary Exhibition Fund Committee, Hon. R. P. Simmonds, *J. A. Benjamin, Esq., A. D. Goffe, Esq.*

(1) Open to Small Proprietors Members of Branch Societies of the Jamaica Agricultural Society only. A Small Proprietor for the purpose of this Competition, is a Proprietor owning not more than 20 acres of land.

(2) All Competitors to pay 1/- entry fee. Entry fees to be paid to W. Cradwick, *Agricultural Instructor, Highgate P/O., not later than December 31, 1915.*

(3) The judging will commence in March, 1916.

(4) The cultivations entered in the Competition must consist of at least one acre, one acre for the purpose of this Competition shall consist of at least 300 trees.

(5) The cultivation may be a mixed one. Cocoa, Coffee, fruit trees, etc., may be *grown on the same* land, *so long* as it contains not less than 300 Cocoa trees.

(6) No Cultivation to be more than ½ a mile from Parochial Road.

(7) The judging shall be conducted on a system of points as follows:—

Forking and weeding	20 points
Draining	20 "
Pruning	20 "
Disease eradication and preventive measures	20 "
Insect eradication and preventive measures	20 "
Picking and disposal of pods	20 "
Appliances for curing	20 "
Manuring and mulching	20 "
Regulation of shade both temporary and permanent	20 "
Books, records of Cultivation including revenue and expenditure	20 "
Tools including pruning tools ..	20 "

The Prizes will be as follows:—

1st Prize 1 value	£6	0	0
2nd Prizes 2 value each	4	0	0
3rd Prizes 3 value each	2	0	0
4th Prizes 4 value each	1	0	0
5th Prizes 6 value each		10	0
6th Prizes 12 value each		5	0
Total Prize money	£30	0	0

PIGS.

(Being a few remarks on the Pig by J. A. Ogilvie at a meeting of the Porus Agricultural Society on June 7th, 1915.)

In hazarding a few general remarks on the pig, you must disabuse your minds of any idea that I claim to be an authority on the subject. I can only give you the results of little experiments which I have tried from time to time. It may not be out of place to say that the professional books which we get here are written to suit American and English climates, conditions, and soils which are entirely different from ours, and consequently I would advise you not to place too much reliance on such books. Until some local authority favours us with a practical volume on the subject, we must continue to learn by personal experience, and after all no knowledge is so convincing.

(1). Most of the small settlers own such a limited quantity of land that they are forced to keep their pig-styes in rather too close proximity to their houses, and the unpleasant odour arising therefrom becomes very disagreeable and obnoxious. This odour can be easily overcome by using Permanganate of Potash, a pinch to a quart of water, and sprinkling all round the sty every morning. The Permanganate forms harmless compounds with foul-smelling gases and liquids, and it also acts as a disinfectant by destroying the germs of diseases. It can be bought very cheaply at any druggists.

(2). Old-fashioned people have an idea that the best way to fatten a pig is to give it large quantities of salt which will cause it to imbibe prodigious amounts of water. This is a mistake and has nothing to recommend it. In the first place, water does not form fat cells and in the second, the excess of salt causes the animal to over-drink and this throws too much work on the kidneys, and in the pig the kidneys are rather susceptible to disease. You must not think that I mean to imply that the pig does not require salt—he does, and a tablespoonful or so should be sprinkled over his food once or twice a week at least, whilst young growing pigs should get an allowance of salt four or five times a week. Always remember that corn-tops, potato slips, and such green foods are almost valueless unless salt be given with them.

(3) No matter what kind of feeding you are using, if you wish. the pig to accumulate fat quickly you must give oil in some form, I always use Lard Oil, but I have tried fish oil, sweet oil, coconut oil, etc., with equally good results. Have a bottle always handy and walk down to the sty yourself every morning and pour two tablespoonful over Mr. Pig's pot water. Do not give more than two tablespoonsful or it may prove too laxative. This is of course the dose for a fair-sized pig; a little fellow must not get more than half an ounce (1 tablespoonful.)

It would seem as if nature destined oil in some form as nutritious food for the pig. Look how he thrives on Mangoes and Pears. I have never seen an analysis of these fruits, but if I am not greatly mistaken the main ingredients of the mango are malic acid and tartaric acid and an essential oil, either oil of Turpentine or something very closely resembling it. The Pear contains large quantities of an oily substance known as olein and isn't Mr. Pig in elegant condition while the pear season lasts!

(B). There usually arrives a time in the life of sty-kept pigs when they become dull and listless and refusing all food, lie down

and grunt as if in pain. Some people say that a pig which shews such symptoms is "cloyed" or disgusted with life for the time being. I may be wrong, but I always regard this unhappy condition as due to acute indigestion and treat it accordingly. Leave him alone for 24 hours, and then coax him to eat little bits of St. Vincent yam or pieces of ripe banana, etc., in which you have cunningly concealed equal parts of Baking Soda and Charcoal. When you have succeeded in getting him to take a total amount of about a tablespoonful of each of the above-named remedies he is pretty certain to feel better, because the Baking Soda will neutratise any acidity in the stomach and the charcoal will stop fermentation. As soon as he shows signs of partially returning appetite give him four tablespoonful of oil instead of two as usual. This will act as a purgative and will clear out the stomach and bowels of all offensive matter. It is not a bad plan to sprinkle a handful of charcoal over the food occasionally, and a drop or two of Jeyes fluid should be added to the drinking water every now and then.

(6). We will not discuss the relative values of foods to-night, but no matter what kind of feeding is used, always remove whatever food is left from each meal. Food of any kind left exposed to the air rapidly turns sour and decomposes, and becomes highly dangerous. The eat and "lef" principle has caused many a poor man to bewail the loss of a promising pig. Feed at least twice a day. One tremendous meal at night always results in indigestion by dilating the stomach too much.

(7). I have always believed that "hog sick" was some form of charbon or anthrax. This, as you all know, is a very malignant disease which causes rapid decomposition of the blood. It only attacks rich blooded animals in the prime of health. Should you hear that "hog sick" is busy in your locality, knock off feeding at once and half-starve your pigs till the epidemic has worn itself out Thin pigs are better than dead ones. If in spite of your efforts the disease kills several of your animals see that the carcases are burnt thoroughly and completely.

(8). Little pigs are greedy little things and frequently get choked with bits of cocoa-head, breadfruit, etc., in an effort to swallow more than their throats can accommodate. This obstruction can sometimes be overcome very quickly by catching the unfortunate piglet and holding him upside down while at the same time a second person strikes him smartly over the throat. Too much force should not be used or the delicate membranes of the throat will be injured.

(9). I would advice you to experiment until you find out the type of pig best suited to your locality. I have on several occasions bought expensive pigs in Kingston and St. Andrew only to find that they would not thrive on my red dirt place. The particles of red dust seemed to have a most irritating effect on their nostrils and lungs, they developed a dry husky cough and either died or remained for many months in an unthrifty condition. The idea that the same breed of pig will thrive equally well in all parts and at all elevations of Jamaica is altogether a mistake; at least such has been my experience, and as I said before there is no knowledge so convincing as that which we gain by personal experience.

There are many other interesting points about the pig and his care which we will discuss on another occasion.

HOUSEHOLD HINTS.

(These recipes refer to "Irish" not Sweet Potatoes.)

MASHED POTATOES.—Take ½ lb. cooked potatoes, 1 oz. butter or dripping, 2 or 3 tablespoonfuls milk, white pepper and salt. The potatoes should be well cooked, dry, and floury. If newly cooked and hot, add the butter or good beef dripping to them, and mash them in the saucepan with a fork or potato masher until they are quite smooth and free from lumps. Then season to taste with the white pepper and salt, and moisten with a little milk. If cold potatoes are being used up, it will be better to rub them through a sieve or put them through a vegetable presser. Melt the butter or dripping in a saucepan with a little milk, and add the sieved potatoes to them. Season to taste, and stir over the fire until thoroughly hot. Put the mashed potatoes into a hot vegetable dish, piling them up in the form of a pyramid. Mark prettily with the back of a fork, sprinkle a very little chopped parsley on the top, and serve at once. Or, put the mashed potatoes into a greased fireproof dish, smooth over and mark with the point of a knife. Brush over with a little milk or beaten egg, and bake in the oven until nicely browned

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TO STEAM POTATOES.—Steaming is one of the simplest and best ways of cooking potatoes. Prepare the potatoes as for boiling, and cut them to an equal size. Put them into a steamer, and sprinkle with salt. Place the steamer on the top of a saucepan of boiling water, and put on the lid. Keep the water in the saucepan underneath the potatoes quickly boiling all the time. The time for cooking will depend on the size and kind of potato. When they can be pierced easily with a skewer, cover them with a clean cloth, remove the steamer from the water, and stand it in a warm place until the potatoes are dry and mealy. Ten minutes should be sufficient. Time to cook, thirty to forty minutes.

* * * * * *

TO ROAST POTATOES.—Wash and peel the required number of potatoes. Put them in a saucepan with boiling water to cover them, and add a little salt. Allow them to boil for ten minutes, and then drain. Dredge the potatoes with a little fine flour, and put them in a baking tin with some good melted dripping. Cook them in a moderate oven until they are nicely browned and cooked through. They should be turned over occasionally during the cooking. Drain them from the dripping, and sprinkle with a little fine salt before serving. If a joint of meat is being roasted the potatoes may be cooked in the same tin, putting them in the required time before the meat will be ready. Time to cook, thirty to forty minutes.

* * * * * *

WHEN BOILING POTATOES.—Remember to select the potatoes all one size, or as nearly as possible. It is impossible to boil small and large potatoes properly together.

To nearly cover the potatoes with water.

To add as much salt as tastes the water.

To bring them slowly to the boil.

To boil the potatoes slowly; the larger the potatoes are, the slower they should be boiled, because the heat takes longer to penetrate to the heart. For very large potatoes a little water may be added once or twice, to prolong the boiling.

To drain them before the skin cracks in the least, but not quite dry.

To allow them to steam five or ten minutes with the lid on, and a few minutes with it off. They may now be quickly peeled and dished up.

Some kinds of potatoes will cook better if put on in warm water instead of cold; one or two trials will soon show which is best.

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STOCK NOTES.

BLOODY MILK.—A correspondent asks how the milk from his cow is bloody. This sometimes happens especially in heifers just come into milk when they are of dairy strain and give a large quantity of milk, and still more especially when they are feeding on fresh young grass at the same time. The course to follow is to milk clean out, shift to older feeding if possible, and the milk will within two days come all right. If, however, the cow has got a blow on the udder, or slipped somewhere and strained itself, bathe the udder wth hot water and bathe with a cooling lotion, (Zinc Sulphate, and Lead acetate lotion) or rub in a good "Healing Oil."

ANTHRAX.—Recent investigations have made it very plain how dangerous it is to leave carcases of any animals that have died from Anthrax lying on the ground to be eaten by John Crows, dogs, pigs, etc. Such carcases should be burned immediately the animal dies. Investigation proves that infection can be carried by John Crows, dogs, swine, cats, flies and even fowls.

—:o:—

WARTS ON COWS.—There are different kinds of these on animals. Cows are often badly affected by them. If the warts have necks they can often be pinched off with the fingers, or if not, a fine thread or horse hair loop drawn tightly around will cut into the necks until they can be easily taken off. Then the spots should be touched with coal tar. Those warts that are round and flat, can be seared with a hot iron, and then anointed with Castor Oil When there are masses of small flat warts these can be touched lightly with a hot iron and then oil; or simply rubbed daily with castor oil to which has been added about one-fourth of coal tar.

Warts on the teats of milking cows are very troublesome, as, if sore at all, they may cause the beasts to kick when being milked. These warts, however, should be attended to when the cow is out of milk by slicing off with a sharp knife if the warts are pendulous and just touching with a fine red hot iron—we use an old pocket pen-knife blade; if flat warts, touch with the red hot knife blade, then anoint with the Castor Oil and coal tar mixture, and this treatment will get rid of them. If left until the animals are in milk the only thing to do is to rub the warts with castor oil.

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STRAIN.—"Can you help me to save the life of my favourite pony? He became sick this way:—On Monday, 31st May, I found him with a swelling under his belly, his cod swollen to the left side. I observed the ground and noticed a stump with hair on it, it appeared that while rolling he squeezed the cod to the back of it. During the first week the swelling reached to the chest between the front legs. I used a bottle of Elliman's Embrocation which brought down the swelling on the abdomen but with all my effort the cod is still swollen. I tried a poultice of cornmeal and mustard but failed. I used the knife. It drained a good deal of liquid. The swelling bulges to the left flank and measures 19 inches across and 15 inches to the back of cod. It is still hard to the touch.

Should you recommend anything that is not easily procured in the country please purchase and send and money will be promptly refunded.

I know you are a busy man but the life of a favourite horse will nerve you to make a quick reply. Thanking you in advance."

Gayle.

* * * * *

You seem to have treated the trouble pretty well. The pony may have strained and also cut himself slightly, and poisonous matter entered through the wound however slight. We could only recommend hot fermentations on the swelling and painting with Tincture of Iodine daily, with rest and plenty of green food.

—:o:—

FARCY.—Farcy is by far too common and causes great loss in mules and donkeys being incapicitated from work on the roads. Many

think it is incurable and destroy their animals; others keep their beasts for months and months doing nothing, but all the time using this and that kind of treatment which sometimes is successful. Nearly all cases of Farcy can be treated and made better within six weeks if attackedin the proper manner internally and externally simultaneously. We have seen six successive cases treated successfully in that period.

Flies spread Farcy more than any other medium. It should be made illegal for any beast to remain with open farcy sores untreated, whether on a man's own premises or not.

A mixture of Stockholm Tar and common Castor Oil equal parts, is a good dressing to keep flies off. This will not cure; it is only a good sticky antiseptic dressing for such sores.

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PIGS.—Give pigs that are confined plenty of green vegetable food, for especially in this hot weather and with the new corn crop coming in and plenty of green bananas being fed or overfed, there will be epidemics of sickness again. We say green vegetable food because many people who feed green bananas think that is enough. We mean by "vegetable," plenty of juicy grass and vines; cocoe stalks are excellent.

On the first symptoms of illness, and that is the refusal of food, give plenty of water to drink with some "Salt Physic" in it (Epsom or Glauber Salts).

Give plenty of shade too in these days of hot sun. If the pig refuses to drink the water with the physic which is not likely, but sometimes happens, then give the Castor Oil dose so often mentioned in this JOURNAL, about two ounces of Castor Oil (four tablespoonfuls) an two teaspoonfuls of Turpentine or a coal tar disinfectant per 100 lbs. of hog. This is a light dose.

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PIGS.—One of the best medicines for pigs especially those confined is always at hand. A correspondent in an American Farm Journal says:—

"Now more than sixty years ago I read in a farm paper that wood-ashes would prevent hog cholera. At once I filled a lard tin with ashes and carried the ashes to the five hogs left, and they devoured the ashes as so much corn mush. I had lost then nearly 200 hogs. Since then I have given my hogs wood-ashes and never have lost one. Before this when I killed my hogs I would have to throw away nearly all the livers because they were so diseased. I would find worms ten inches long and as large as a cedar pencil, in the entrails. Now livers are all good and sound and there are no worms in bowels. Before using ashes the hogs were very hard to fatten; now I have no trouble in this respect. "EXPERIENCE."

———:o:———

HOG CHOLERA.—It is stated that where sour milk is fed to hogs they seldom fall victims to Hog Cholera, when they are otherwise kept in good condition.

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RABBITS.—When these animals are thin and shabby looking in spite of plenty of food, catch one up and examine it for lice. Like goats, but not to the same extent, rabbits sometimes are infested with lice quite unknown to, and unsuspected by the owners. If lice are found, clean out the whole rabbit hutch and dust dry sulphur all about it and into the ur of the rabbits too, catching them up for

the purpose. Then put dry bedding in. Repeat this in three or four days. Rabbits do not like to be wetted, but a careful wash or dip into a disinfectant mixture will kill the lice; remember to rub round the face. We prefer the dry suphur method.

If there are no lice and the rabbits sit huddled up, but occasionally seem uneasy, suspect worms. These are also parasites that people do not suspect rabbits to suffer from. One teaspoonful of Castor Oil with 4 to 5 drops Turpentine or coal tar disinfectant like Jeyes repeated in the oil twice in one week will pass the worms. Clean out the hutches after each dose.

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POULTRY NOTES.

The true test of the value of fowls is their performance. A dual purpose fowl suits circumstances in Jamaica best as table fowls are wanted almost every day in the average country household, and a decent size and weight is required. To be of full use we do not think the average grown hen should weigh less than 5 lbs. (gross weight) and the average grown cock 7 lbs. and around that weight (not less) With this weight there is no need to have hens that are not also first class layers.

It was the opinion some years ago that fine layers must run small on the lines that Jersey and Guernsey cows are small but great milkers, yet dairy Shorthorns are not small cows but large animals and they give more milk than Jerseys. Some writers do not believe in the existence or usefulness, or profitableness of a dual purpose cow, yet they believe in and write about the usefulness of the medium size hen, good for laying, and for table at one and the same time.

The success of the White Wyandotte breed in the great laying competitions both in the United Kingdom and the United States proves that hens can be of good size and yet of a type that can lay. The most successful White Leghorns in the laying competitions in the United States have been of the English type, larger fowls now than were formerly thought possible to make the best layers. We have, too, worked on this idea for some years, and have a laying breed, formerly to the small side, the hens of which when placed in the breeding pen last November averaged 5½ lbs. weight, and the cock was 8¼ lbs. Hens that commenced laying in November are still laying in July, although we were unfortunate enough to lose two of the best by accident.

Then there was a time when it was thought necessary to sacrifice type to laying powers. That also is not necessary now, for where hundreds up to thousands of pullets are hatched every year, by individual breeders there is so much room for selection that size, beauty, and laying type can be combined. We in Jamaica have not the same opportunity, as we do not hatch so many, and we should rather sacrifice outward form and shape, to secure the largest pullets from the best laying hens. It is a matter of selection and feed. The most important point is the selection of the cock. He is half the flock, perhaps more than half, as a poor cock can utterly ruin the succeeding fowls for utility. Select the best all the time.

What we want in Jamaica is a good local breed as they have in parts of Cuba. The Cuban Game fowl is a most useful fowl, takes care of itself, finds most of its own food, yet does not get wild, and is as hardy as a wild bird. There are, too, some good laying strains of these

small Games. But for our circumstances it is too small a fowl, and the eggs are too small. Judicious crossing might result in a larger fowl of the same general type, hardy, easily fed, fair weight, fair layer

Fowls of successive generations bred here are ever so much hardier than imported fowls, and their mistaken descendants.

* * * * *

This has not been a good year for hatches but it was been an excellent year for health of chickens with us. We have not yet had to lift one from the ground to doctor it internally, and have only doctored one externally—so far. There is not a three weeks since Christmas week that we have not had a hatch or several hatches, yet twenty per cent of the chickens are *non est* gone. First a hog ate up part of two broods: young chickens were then kept out of the pen where this hog was: then a Great Dane pup amused herself chewing up some; the dog was taught severely not to touch chickens; about 10 were trampled on at different times by ponies in the stable, and it is useful to let chickens scratch in the stable, as they are the best destroyers of the larvae of the housefly, and of course feed themselves there.

We can trace no loss to Mongoose as two traps are constantly set and 3 terriers hunt around, but there might be a few. The greatest loss is from hawks as when the chickens have left their mothers and wander far and wide, the hawks which are always circling about, get one now and then. Small settlers are the greatest sufferers from hawks and yet will not often take the trouble, even when they possess a gun, to watch patiently and shoot the hawks. Yet they will spend a whole day after birds in the bush and woods for "sport." The offer for half a crown to every hawk brought in has resulted in one in two years.

Hawks can be poisoned with Nux Vomica, a mild form of Strychnine.

Get some common chickens—cost 6d.—keep in a coop, feed on soft food, with an allowance at the rate of one drachm of Nux Vomica (Strychnine) to 12 chickens; fowls can stand large doses of Nux Vomica which other birds and beasts cannot stand. In 7 to 10 days tie out, (with a thin string easy to break) a few of these chickens in a field and let the hawks take them. The hawk will certainly die from poisoning. This method is only of great use when the hawks have young ones in the nest, as these will be poisoned. On the whole the gun is the easiest check on hawks.

Fowls must have a dust bath. See that they get some loose earth mixed with Wood Ashes. Where lice are specially bad, add a handful of sulphur. Where there are many fowls several dust baths should be so prepared.

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MOULTING.—Owing to the very hot weather fowls will be mouling earlier than usual, and the best layers, those that commenced laying in October and November last year, moult earliest. Put a little sulphur in the food as this will help the fowls to re-feather. One teaspoonful to a pint of meal is the dose. Remember also a handful of charcoal in the soft food, or one tablespoonful to a pint of meal.

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GUINEA FOWLS.—It is getting rarer and rarer to find this fine bird on the table: fewer and fewer are being kept. Yet there are parts where Guinea fowls can still be bred largely without disturbing

neighbours. In the Liguanea Plains where there are stretches of wire grass; in the plains of St. Catherine, in Vere, on the sugar estates of Westmoreland, in the coastal districts of Hanover, St. James and St. Ann. But fresh blood is badly needed. There has been little exchange by breeders. The birds are left to mate now they please, and as flocks are small, the birds breed in and in until the young ones have no stamina.

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COMMENTS.

BANANA MEAL.—We notice that experiments have been tried in the United States in the use of potato flour to help out wheat flour, and it has been found that potato flour costs as much as wheat flour, as would be expected in a country which has the largest production of whaat in the world., and not such a very large production of potatoes. In Germany, on the contrary, potatoes are cultivated so largely that they are the cheapest food available, and so at the present time they are using potato bread there, largely, *i.e.*, a proportion of rye, or wheat flour, with much potato flour, which they call "War Bread." Here bananas are plentiful and cheap at the present time—so plentiful that in banana growing districts they form the chief food for pigs. Now a bunch of bananas fed to pigs only gives a return of 1d. to 1½d. in pork, and the same bunch of banans will give the value of 10d. to 1/- in banana meal.

Now if a hurricane was to come along between August and October and blow down all the bananas, all the yams and all such upstanding crops, there would be an immediate scarcity of food. The man, however, who had utilized his bananas to make banana meal and had a few barrels of this product stored away, would feel fairly comfortable. We strongly recommend anyone with bananas in quantity that they cannot sell profitably to start out making Banana meal. The process is easy. The bananas are simply taken on the turn, peeled, cut into chips and these chips can be dried in the sun or in a baker's oven, *i.e.*, where there is not a proper dryer. These chips can be stored in flour barrels and when wanted for use ground in an ordinary corn mill into meal. Banana meal forms a very fine stand-bye in the household for porridge, puddings, and with half or less of wheat flour for biscuits, scones, and cakes.

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FOOD CROPS.—Immediately War was declared in August last when it could not be foretold how long Britain would take to get command of the seas and there was risk of our imported food supples being interfered with, we sent a circular to each Branch Society, and a copy to most Clergymen many of whom made reference *to the subject in their pulpits on the following Sunday, urging immediate attention* to the planting of food crops. All our Agricultural Instructors, too, were directed to make this their chief subject until they were satisfied that there was a large response, and this they did. In October reports were received that there had been such a planting of corn, peas, beans and sweet potatoes, that, given fair seasons, there was likelihood of a great abundance of food being available. This has been the case.

In the spring again the same efforts were repeated. There is now abundance of cheap food which has been further added to by the large quantities of bananas for local use available, because of the limited export demand this year.

The great drawback is that as seasons and time of crops as well as kind of crops differ in different parts of even a small place like Jamaica there is sometimes a superabundance of one particular food or fruit in one district which another district has not got, and means of transport are often too expensive to exchange or sell products on any scale.

Jamaica is so far fortunate that if cash is scarce we have local foods in abundance; there are home grown foods in abundance.

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CORN.—All those who are growing corn should bear in mind to measure carefully a typical chain in the field of corn, that is, to measure the yield. We are all going in for large cobs, large grain and yellow corn, and for all we know at present, we may all be wrong. What we do want is the most prolific kind of seed corn so long as it has a fair grain, and unless a man knows his yield fairly accurately, he will not know whether he is working on the right lines.

Some of the most prolific kinds of corn in the world do not bear large cobs, have not latge grains, but they are very sure growers with a steady average of 2 cobs to the plant. The yield per acre is the chief criterion.

SEEDS.—It may seem early to write about new season seeds but if we are to import in October as usual we should like to hear from those members and Branches who may want large quantities of vegetable seeds; and from all those who wat seed potatoes to plant late in October or early in November, which is the season for the lowlands.

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SCHOOL GARDEN COMPETITIONS.—The School Garden Competitions will be held on the ame lines as previous years. One point that does not seem to be understood by the Teachers is whether they can use the land outside of their School Garden. This is allowed so long as it is in the School grounds. The rules were published in June JOURNAL.

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DEPARTMENT OF AGRICULTURE.—We have just received (July 27th) the Bulletin of the Department of Agriculture (No. 8 Vol. 2) which is isused half yearly. It contains some very useful articles and 19 fine illustrations. The articles deal with *Diseases of Cultivated Crops, by the Microbiologist; Sisal Hemp in Jamaica,* Cattle in Jamaica, and Cauto Cotton by the Director of Agriculture; Tropical Fruits in Florida and Economic Entomology by the new Entomologist, Mr. A. H. Ritchie; A Banana bearing two bunches.

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COWPEA HAY.—We have very often written of the value of Cowpeas grown through bananas, sugar cane, and other crops, and turned in as a green dressing when in blossom. We have sometimes written also, that when corn is planted it is well to plant the rows wide, say 5ft., and plant Cowpeas through. If the land is wanted to be kept up in fertility, cut down when in blossom, but if the Cowpeas *can be used as grain profitably, as they usually can, reap them. If we could grow* Cowpeas cheap enough to sell at 6/- a bushel, they would make a profitable addition to the feed for horses and fowls by adding a proportion to corn. There is another form in which the Cowpea can be used, and that is, as hay. The Cowpea vines can be cut when they are in blossom, put up in small heaps; then each heap turned over until they are fully dried, then stored in a stack and thatched over. The vines must be thoroughly dried, otherwise, they will ferment. Where dairy cows are kept and dry weather at a certain period is expected, a stack of Cowpea hay would come in handy.

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WOOD-ASHES.—This is a grievous item of waste, especially on small settlers places and more especially where cane sugar is made. Wood-ashes are chiefly valuable for the amount of Potash they contain and Potash is a very dear Fertilizer *at the present time for the chief Potash mines that supply the whole world are in* Germany. One ton of unleached wood-ashes that have not been washed by the rain contain on an average 100 lbs. of Potash, 40 lbs. of Phosphoric Acid and 600 lbs. of Lime—Lime that can be used by the plants at once.

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TEA.—Anyone who wishes to buy a considerable quantity of Assam Tea Seed can communicate with me. It wouhld require to be imported from Upper Assam, but would be fertile seed.

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LOCUSTS.—Swatms of locusts have been causing devastation in Central America according to reports from Costa Rica and other places. These locusts have also been causing much loss in Venezeela and Columbia. The plants chiefly attacked were palm trees of various kinds, corn, peas and beans and also Bananas, Coffee, Cocoa, but *Tomato and Guinea Grass were not touched.*

There is little chance of these locusts flying over the wide stretch of water between Venezeula and here but they have appeared in Trinidad which is only a short *distance over a narrow strip of sea from Venezuela.* As strict watch is kept here on all importations from Costa Rica it is not likely that the locusts can be brought into the Island in any way.

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HEMP.—In normal years about 200,000,000 pounds of binder twine are required for harvesting the grain and flax crops. Frow two-thirds to three-fourths of this is made from henequen sisal fiber, practically all of which is produced in Mexico and exported from the port of Progresso. This year the demand for twine is certain to be greater than ever. The disturbances in Mexico have caused an appreciable shortage in the stock of fibre now in this country.

There is plenty of room for the expansion of the Hemp Industry. We are years behind in growing Sisal or Henequen which by this time many of our driest distircts should have been exporting largely.

ANTS.—Ants are often a great nuisance and may do considerable damage when they make nests at the roots of plants—especially young plants just set out. For a good many years now we have experimented slowly with some of the proprietary soil disinfectants sold under various names—such as Vaporite, Anterite, and Vermite, which are all pretty much the same. They are recommended to be applied to the soil to kill grubs which attack the roots of the plants, such as Wire Worms which attack the roots of potatoes, but we have found them also most useful in driving away ants. We have applied Vaporite in the evening where there were swarms of ants and in the morning there was not a sign of an ant.

We have some Apterite in stock at 6d. per lb. on trial. This is expensive, but when imported in very small quantities it does become very expensive; large quantities, however, could be sold at half the price. When Cocoa seeds are planted at stake and the young plants grow, ants are especially troublesome, making little hills round and on the plants. A sprinkling of Vaporite round the plants will keep away ants for a period.

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DRYING CORN.—Let the corn dry well in the field, but if this cannot be done thoroughly, from any reason, keep the corn in the cob and dry it in the hot sun: cobs kept to supply seed corn should simply be husked and hung up in the breeze. Indeed formerly, when corn was not grown by hundreds of bushels but still in substantial quantities, it was dried in the cob and kept by simply folding back the husks and hanging up big bunches of the corn, if possible, under cover where it would get the breeze, but often simply on bamboo or other rods put through trees. The corn kept exceedingly well in that way and was shelled out as wanted.

When the weather is wet or there is too much in the way of small stock in the yard to allow the corn to be spread out in safety, or where there is a large cropa and little druing accommodation, why talk about central dryers of large capacity, and do nothing meantime? Why not arrange with anyone owning a baking oven so many of which are scattered about the country, and for so mcuh a bushel give the corn meant to be stored and kept, a half hour to one hour of moderate heat. The corn can be put in those ovens of metal sheets several tiers built up on loose bricks.

As a matter of fact, a drier for corn need not be elaborate, oe expensive like a Cocoa Drier. One can be built entirely of zinc sheets for a few pounds to dry 50 bushels at a time. And corn does not require long to dry.

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When the corn is shelled do not fling away the cobs. If you can fined no other use for them, make charcoal of them and feed a big handful every day to the pigs in their food.

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SUN FLOWERS.—It is reported that the Germans have succeeded in making a substitute for butter out of sunflower oil. Great crops of sunflowers are being planted all over that Empire in vacant places, along roads, and at railroad stations, with the idea of securing as large a crop as possible for making sunflower butter. As everyone knows who has ever tried to cure sunflowers in a damp climate, the seeds are oily, and the oil has a pleasant odour and taste. The German chemists work miracles in their laboratories, and there is no doubt whatever that they will work out this plan of utilising sunflower oil. There will be great industrial discoveries growing out of efforts to obtain food which may have a greater effect upon the world than any changes in the map of Europe. The discovery of eleo during the siege of Paris has certainly had a far-reaching effect upon the dairy industry, and such work as this utilizing of sunflower oil, or the discovery of new uses for the potato crop will, in the future, change the eating habits of human beings, and thus change the agrculture of the world.—*Rural New Yorker.*

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BANANAS.—In July Jamaica bananas were selling in the London market at £12 to £14 per ton. It is contended by correspondents that if sold by weight bananas should be bought by the weight.

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HALF YEARLY GENERAL MEETING.—The Half Yearly General Meeting held at this Office on Thursday, 15th July, beginning 11.40 a.m., was very well attended. It was indeed the best attended of any since the General Meetings were held half yearly.

The Board room was crowded to the door, some of the delegates having to stand in the varandah. It was a hot day and the room not having a high ceiling, although well ventilated, was very hot. The meeting lasted from 11.40 until after 3 o'clock. This was far too long and yet all the business of the Agenda was not got through; indeed if all the Resolutions sent in to the Secretary had been put forward there would have been an all night and next day sitting.

The most absorbing subject to most of the delegates was the Buying of Cocoa. The following Resolution was moved and passed unanimously:—

"That it be a recommendation to the Government to abolish the license to purchase cocoa in pods or wet cocoa, unless to persons possessing approved premises and appliances for the cruing of cocoa for rexport."

But this does not cover all the ground of the Resolutions sent in on the subject but these will be dealt with in Committee.

Resolutions in connection with the Buying of Cocoa as follows were not dealt with:—

More efficient means and methods of inspecting Produce Buyers Books.

Permits to sell Cocoa.

Severer punishment for breaches of the Produce Protection Law.

There was also a Resolution to add to the schedule of the Produce Protection—Law—Small Stock such as goats, pigs and fowls. This would be an innovation but is certainly worth discussing.

A fairly full report of the Meeting together with the Secretary's Report will be published separately.

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FRUIT GROWERS ASSOCIATION.—Although most of our products have borne well, and prices for most have been very good, most of our difficulty consisting in getting enough shipping to transport our products, our chief exports consist of bananas to the extent of nearly 50 per cent of the total value of our exports. So when our banana trade is dull it affects the whole Island in about the same ratio, no matter how well other crops may have yielded and how well they may be selling.

When bananas are selling well, every man who has bananas is quite contented with himself and goes on the principle "Sufficient for the day, etc." When, however, there is storm, or drought, or some lowering of prices through dull trade in American and European markets, or through manipulation of trade by the Companies who are shipping, or through a situation like the present when there are combinations of circumstances making the demand for bananas here very limited, then there is a great cry for something or other to be done by the Imperial Government, or the local Government, or the Agricultural Society or all of them. At present we receive letters almost every day in this connection.

What is wanted is a special combination like a Fruit Growers Association, run preferably on co-operative principles, with shares taken according to the average number of acres of bananas cultivated; orders for fruit to be pooled, and output regulated, with a small tax, say a farthing a bunch paid in to the Association to provide a fund, which would be used for the purposes of the Association, one of which would be an insurance for the benefit of members suffering serious loss through any cause. It would be far better for banana growers to receive help in a difficulty from an Association of their own than be bound up with any Company or individuals.

Such an Association was actually proposed and partly orgaised in 1903 immediately before the hurricane of that year. There was a large and enthusiastic meeting in the old office of the Agricultural Society in Port Royal Street the Board Room being crowded to the door; everybody was in favour of the scheme. The late R. A. Walcott, Solicitor, acted as legal adviser free, the writer acted as temporary Secretary free, the original organisers amounting to, if we remember right, four or five acted as a temporary Committee.

But when the articles of the Association were submitted and put forward binding members of the Association tightly under a penalty to adhere strictly to the rules of the Association—what happened? The enthusiasm evaporated—the meeting called to sign the Agreement consisted of the Committee and one or two more.

If that Association had been formed, not for offence but for defence, for the protection of all banana growers who were members of the Association, no banana buying company could discriminate between growers as to who would get orders and who would not; then orders would go to the Association to give out, according to acreage, when there happened to be more fruit than demand; and by thss time there would have been a substantial fund amounting to some £50,000 probably, available for any emergency.

However, after our experiences of 1903 we have let the matter of a Fruit Growers Association alone. It is still possible, always has been possible, but not probable on the wide, co-operative principle including large and small growers of some standing that alone would be effective and of best use to the Island in general.

WAR GIFTS FROM JAMAICA.

I.—SHIPMENT PER S.S. "CORONADO," ON JUNE 21ST, 1915.

Donor.	Address.	Quantity.	Kind.
H. F. D'Aguilar	North Hall, Chapelton	25 Boxes	Grape Fruit.

II. SHIPMENT PER S.S. "MANZANARES," ON JULY 1ST, 1915.

A.—Preserves.—

Donor.	Address.	Quantity.	Kind.
Alf. A. G. Lawson	Kingston	1 tin 10 lbs.	Grape Fruit Marmalade
Mrs. W. W. Wynne	Mandeville	8 tins 80 ,,	ditto
Misses Harding	Mandeville	4 ,, 40 ,,	ditto
Miss Muirhead	May Pen	2 ,, 20 ,,	ditto
Mrs. C. G. Farquharson	Black River	9 ,, 90 ,,	ditto
Mrs. H. E. Crum-Ewing	Mandeville	4 ,, 40 ,,	ditto
Mrs. M. Wong Lee Kin Kee	Kingston	1 ,, 10 ,,	ditto
Miss M. T. Davis	Kingston	1 ,, 10 ,,	ditto
Mrs. A. Westmoreland	Annotto Bay	6 ,, 60 ,,	Guava Jelly
Mrs. F. Barnet-Brown	Fairy Hill	2 ,, 20 ,,	ditto
Mrs. W. W. Wynne	Mandeville	1 ,, 10 ,,	ditto
Mrs. J. Silvera	Oracabessa	1 ,, 10 ,,	ditto
A. B. Lowe	Adelphi	1 ,, 10 ,,	ditto
Mrs. E. A. Miller	St. Margaret's Bay	2 ,, 20 ,,	ditto
Mrs. Iris Chen	Kingston	1 ,, 12 ,,	ditto
Henry Chin	Kingston	1 ,, 12 ,,	ditto
A. C. Bancroft	Golden Grove	2 ,, 7 qts.	Honey
	Total	47 tins=454 lbs. preserves & 7 qts. Honey	

B.—Fruit.—

Adam Roxburgh	Walkerswood	25 Boxes	Oranges
L. L. Roper	Walkerswood	25 ,,	,,
Robt. Craig	Chapelton	10 ,,	,,
		10 ,,	Grape Fruit
	Total	60 boxes Oranges & 10 boxes Grape Fruit	

C.—Miscellaneous.—

Mrs. W. E. Powell	Half Way Tree	1 Case	Clothing
Chas. Noel Eddowes	Half Way Tree	1 Cask, 28 galls.	Honey
J. F. Thompson	Falmouth	9 Cases, 554 lbs.	Banana Figs
		(Part of a ton paid for by the donor)	

D.—Gifts for Individuals.—

Sender.	Gift.	Addressee.
Mrs. Clark, Half-Way Tree	1 tin 12 lbs. Guava Jelly	Nurse Mary Clark, Nurses' Home, Royal Infirmary, Manchester, England.
	1 tin 12 lbs. Guava Jelly	Trooper W. G. Clark, 4th Troop, C. Squadron, King Edward's Horse.
Alex. Gordon, St. Ann's Bay	1 tin 10 lbs. Guava Jelly	Major H. S. Sewell, 4th Royal Irish Dragoon Guards.
	1 tin 10 lbs. Grape Fruit Marmalade	Brit. Exped. Force.
Hon. E. F. H. Cox, Half Way Tree	1 tin 16 lbs. Roasted Cashew Nuts	Private H. B. Cox, 1st Canadian Contingent, Scottish Division, Hospital St. John & St. Elizabeth, 40 Grove End Rd., London, N.W., Eng.

Mrs. N. Roots, Secretary Victoria League	5 tins 52 lbs. Guava Jelly	Red Cross Head Depot, London.
Jamaica Red Cross Branch, Kingston	2 tins, 20 lbs. Ginger in Syrup 5 doz. Turtle Tablets 133 lbs. Ground Coffee 1,300 Cigars 2,000 Cigarettes	
Mrs. Stone, Oracabessa	5 tins 16 lbs. Guava Jelly and Dolce	Lieut. D. L. Tate, R.A.M.C No. 3 Gen. Hospital, Brit. Exped. Force, Le Trepont, Mers, France
C. E. Scudamore, Port Antonio	4 boxes, 200 cigars	Private H. G. Scudamore, No. 4 Co., 2 Bat., H.A.C. The Tower, London, Eng
C. F. Pengelley, Balaclava	7 lbs. Ground Coffee	Red Cross Head Depot, London.
Mrs. Richards, 64 Gold St. Kingston	24 boxes Banana Figs 2 boxes Cigarettes (50 packs each) 1 tin 10 lbs. Guava Jelly	Corpl. H. D. Richards, 28080, 1st Canadian Contingent, Compagnie des Prisonnaires Baragne 'D' Guessen, Germany.
J. E. McCrea, Port Antonio	1 tin 10 lbs. Grape Fruit Marmalade.	
Miss J. Husband, May Pen	1 tin 10 lbs. Grape Fruit Marmalade.	H.M.S. "Marlborough."
Mrs. R. G. Black, Tower St., Kingston	1 tin 12 lbs. Guava Jelly	Driver W. Black, R.F.A., 71709, 27 Div. Artillery, Head Quarter Staff, Brit Exped Force, France
Mrs. M. E. Clemetson, 120 Duke St., Kingston	1 Case Miscellaneous Preserves	Private D. L. Clemetson, Sportman's Battalion, Grey Towers' Barracks, Hut 13, Hornchurch, Essex, England.
H. L. Mossman, Bog Walk	1 Case Miscellaneous Preserves and Tobacco	Trooper E. L. Mossman, 1st. King Edward's Horse, Brit. Exped. Force, France.
Mrs. Hilson, Dove Cot Park, Spanish Town	1 case containing Woollen Articles of Clothing	Mrs. Gossip, Daily Sketch Office, Shoe Lane, Lonoon

SHIPMENT PER S.S. "CAMITO," JULY 19TH, 1915.

A.—Preserves.—

Donor.	Address.	Quantity.	Kind.
The Misses Harding	Mandeville	4 tins 40 lbs.	Guava Jelly
Mrs. Alexander	Mandeville	4 „ 25 „	ditto
Mrs. Capstick	Walkerswood	1 „ 10 „	ditto
The Misses Harding	Mandeville	2 „ 20 „	Pine Jam
Mrs. H. E. Crum-Ewing	Mandeville	3 „ 30 „	ditto
Mrs. Griffiths	Mandeville	4 „ 40 „	Grapefruit Marmalade
Mrs. C. G. Farquharson	Black River	3 „ 30 „	ditto
Mrs. Alexander	Mandeville	1 „ 10 „	ditto
Mrs. C. G. Farquharson	Black River	1 „ 7 „	Mango Jam
Mrs. Buckland	Kintyre, Hope, Kingston	6 Jars 9 „	Guava Jelly
		4 „ 6 „	Pres. Tamarind
Mrs. C. G. Farquharson	Black River	2 „ 4 „	Pres. Mango
Miss Mary Lynch	Middle Quarters	1 tin 21 „	Cashew Candy
		1 „ 29 „	Ginger Sugar
		2 tins 13 „	Coconut Candy
	Total	**27 tins & 12 jars, equal 294 lbs.**	

B.—Clothing.—

The Misses Farquharson	**Black River**	**1 case (about 250 pieces Clothing)**

C.—Ginger Sugar.—

Christiana District, (per R. J. Miller)	Christiana	45 cases (3375 lbs. Ginger Sugar

D.—Citrus Fruit.—

Donor.	Address.	Oranges	Grape Fruit	Limes
		No. of Boxes Given.		
Rev. H. B. Walcott	Richmond	—	6	—
Adam Roxburgh	Walkerswood	25	—	—
Anthony Benn	Spring Hill	7	—	—
Mrs. H. M. Butcher	Chapelton	—	26	—
Mrs. H. E. Crum-Ewing	Mandeville	6	—	—
Mrs. Anna Maxwell	Myersville	1	—	1
L. L. Roper	Walkerswood	25	—	—
Miss Anna Crossley	Buff Bay	3	3	—
S. L. N. McGann	Spring Hill	6	2	—
R. E. Lewis	Mandeville	16	—	—
F. J. Delapenha	Mandeville	12	—	—
	Total	101	37	1

E.—Walking Sticks.—

Donor.	Address.	No. Given.	
C. S. Chamberlain	Kingston	23	
R. S. Haughton	Kingston	7	
Mrs. W. J. Nash	Dry Harbour	6	
Mrs. M. Earle	Leinster Rd., St. Andrew	3	
Miss F. L. Sharpe	Retreat	110	
Miss M. Harris	19 Rum Lane, Kingston	1	
J. A. Gutierez	Sevens, May Pen	120	
Mrs. Wynne	Mandeville	300	
W. H. Westmoreland	Highgate	20	
Wm. S. Allen	Mt. Zion, St. Ann's Bay	25	
W. Hyde McCaulay	Spaldings	about 250	(540 sent but some held over for next shipment.)
M. E. Muirhead	Mandeville	132	
The Misses Davies	Salt River	18	
	Total	1,015	

F.—Special Gifts for Individuals.—

(1) PRESERVES, ETC.

Donor.	Gift.	Addressee.
J. T. Musson, Glenwood, Brown's Town	1 box (50 packs) Cigarettes	Pte. Eric C. Musson, 3025, No. 4 Coy., 2nd. Batt., Hon. Artillery Cr., Brit. Exped. Force, London.
L. W. Huddle, c/o Sadler's 1st Store, Kingston	100 Cigarettes 25 Cigars, 3 lbs. Preserves	Sergt.Huddle, 777, 37 Inf. Bge., 6th S. Batt., D. Coy., Buffs, Brit. Exped. Force.
Miss E. Mossman, Moneague	1 tin Tobacco, 8 packs Cigarettes	Trooper E. L. Mossman, No. 1022, A Squadron, 1st King Edward's Horse Attached to 12th Div., Brit. Exped. Force, France.
W. C. Ward, Kingston	800 Cigarettes	Trooper W. D. Clark, 804, 4th C. Squadron, 1st King Edward's Horse, Div.al Cavalry, 4th L'dn. Div., Brit. Exped. Force, France.

Joshua Francis, Jamaica Railway, Kingston	4lbs. Preserves.	Pte. C. K. Lyon, 55289 A. Coy., 19th Batt., 2nd. Canadian Contingent, 4th Infantry Bge., Brit. Exped. Force, Sandling Camp, London.
ditto ditto	ditto ditto	Pte. L. D. Lyon, 10141, A. Coy., 3rd Batt., 1st. Canadian Contingent, 1st. Infantry Bge., Brit. Expd Force, Army P. O., Lon.
ditto ditto	ditto ditto	Louis Lyon, 14933, prisoner of War Camp, Meschede, Germany.
Mrs. Pike, Waterloo Road, Kingston	1 tin (10 lbs.) Guava Jelly, 1 tin (10 lbs.) Orange Marmalade	Trooper A. R. Boor, Reserve Regiment, 1st. King Edward's Horse, Bishop's Stortford, Hertfordshire, England.
Mrs. Fyfe, Walderston	9 boxes (50 packs each) Cigarettes	Sergt. Arthur Field, 2nd. Batt., Canadian Contingent, L'Hopital des Soeurs Evangelines, Ober hausen, Rhineland, Germany.
R. S. Haughton, Kingston	100 Cigars, 1200 Cigarettes	Harold M. Haughton, Esq., 2nd Lt., 77th Coy., R.E., Flanders.

(2). CITRUS FRUIT.

Mrs. Anna Maxwell Myersville	1 box Oranges	Lt. Simmonds, 5th Batt., R.F.A., VIII. Div., 4th Army Corps, Brit. Exped Force, France.
ditto ditto	1 box Grapefruit	Lance-Corpl. C. Maxwell. No. 13624, No. 1 Coy., K.R.R.C., Winchester Barracks, England.
Mrs. S. Moxsy, Chapelton	1 box Oranges	F. Allwood, Esq., c/o. Headquarters Staff, 1st. Bge., C. F. A., Brit. Exped. Force, France.
ditto ditto	1 box Oranges	R. N. Staight, 14191, 1st. Troop, C. Squadron, 10th Royal Hussars, British Exped. Force, France.
ditto ditto	2 boxes Oranges	Lt. A. R. Moxsy, 2nd Royal Inniskillen Fusiliers, 5th Bge., 2nd. Div. British Exped. Force, France.
Mrs. H. M. Butcher, Chapelton	1 box Grapefruit	Corpl. C. E. Millington, 2209, Headquarters, Section 1, 1st. N.M. Signal Coy., R.E., Brit. Exped. Force, France.
Miss Lopez, 15 Blake Rd., Kingston	1 box Grapefruit	Pte. A. C. Lopez, No. 4495, 10th East Regiment, A. Coy., Limekiln St. Barracks, Dover, England.
W. Bagot Gray, Kingston	2 boxes Oranges	Gunner W. Bagot Grey, No. 85372, 10th Bge., R. Canadian H. Artillery, Woolwich.
Capt. W. E. Rerrie, The Orchard, Flint River	1 barrel Limes	The British Red Cross Society, 83 Pall., London, S.W.

BRANCH NOTES.

STEWART TOWN (Trelawny.)—The monthly meeting was held on Wednesday evening, 30th June. The following were present: Mr. John Stockhausen (President) 1st and 2nd Vice-Presidents, the Secretary, Mr. E. Arnett, (Instructor.) 13 other members and several visitors. The following correspondence was read: (a) From Acting Assistant Colonial Secretary dated June 8, 1915, in reply to a letter from the Branch May 28, *re* the widening and deviating of the Main Road leading through Stewart Town on to Dry Harbour, informing the Branch that "owing to financial conditions it will only be possible to undertake new works of an urgent nature, that the work in question cannot be so regarded, and that when financial conditions become more normal the matter will receive consideration." The holding of a Local Show for the benefit of the members was discussed, and it was ultimately agreed to that the Show be held in March next. The Instructor urged on making Corn a speciality. The President impressed on the members the necessity of not only showing samples, but to grow a good quantity to put into the market. It is often the case that good samples are exhibited, but when the call is made for a supply it cannot be got. Messrs. Chas. A. McFarlane and A. W. Grant also spoke in favourable terms on the subject of corn growing, and it is certain that the cultivators here are going to specialize in corn cultivation in future. With the object of stimulating the interest of the members, the Secretary informed the Meeting that he had sent out a circular letter to the members who were absent at the Annual Meeting, and who were evidently losing interest in the Society. The letter was read, and is as follows:—

Dear Sir,—

The Annual Meeting of our Branch was held on Monday evening, 7th inst. Much business of vital importance to the Branch was transacted. The election of officers for this year took place. It has been felt that the members are not evincing that active interest in the Branch which they did a few years ago; and as the Society is considered a most useful one, it would not redound to our credit to allow it to languish and die. We have earned a good reputation as a Branch, let us maintain it. I would respectfully ask, therefore, that your former interest in the Branch be re-kindled, and show it in a practical way by attending the meetings as often as possible on the first Thursday evening of each month. Believe me, dear Sir, it will do you in particular, and our community in general, much good. There is nothing so helpful to prosperity as co-operative efforts. I do earnestly hope you will heartily respond to this invitation, and let there be a better turn out at all future meetings, and so encourage your President and other officers.

The President, Mr. Stockhausen, next brought up the matter of getting walking sticks for our wounded soldiers. The proposal met with the hearty approval of the meeting, and all promised to procure a supply. Mr. Arnett intimated that Mr. Cotter of the U.F. Coy. has promised to take the sticks at the ports where their steamers call. Mr. Arnett will supply the labels. Members who are in arrears with their subscription were advised to promptly pay up, and the Instructor took the opportunity of explaining to the members the advantage they bave as members of the Branch in getting the JOURNAL, which cost a good deal to have compiled, printed, and circulated among the various Branches, and that the greater portion of their subscription remains with them for their benefit—5/- only going to the Parent Society as Affiliation fee. Mr. Leslie Arnett joined as a member, and paid his subscription. The subject of corn production will again be discussed at the next meeting in August. JOSIAH JOHNSON, Secretary

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MAHOE HILL (St. Mary.)—The monthly meeting was held at the Schoolroom on Thursday, 1st July, at 5.30 p.m. There were present, 10 members and the Secretary. The 1st Vice-President called attention to the death of Mr. Charles Ayre, who was a very useful member, and moved that the Secretary send a letter of condolence to the relatives. This was unanimously agreed to. Letters from the Parent Society respecting the half-yearly meeting on 15th inst. was read and another acknowledging affiliation fee and list of members. The Secretary was elected again as Delegate, and he was instructed to put forward the following resolution:—"That the time has come when the Parent Society should advise some scheme whereby the small settlers may be able to obtain better prices for their produce." If it be left to the Branch Societies to move in this matter, nothing will ever be done. Praedial Larceny was discussed at some length. It was agreed that flogging will not check it, but better wages and more land for the people will be the only sure and lasting remedy. W. A. SIBBLES, Secretary.

COOPER'S HILL (Portland.)—A meeting was held on the 1st July, 1915. The regular meeting was postponed to this date in order to meet the Instructor, Mr. Cradwick, who was present. There were present also the Rev. S. M. Binger, (presiding), 12 members, the Secretary and some visitors. As arising from the minutes, the matter of buying Cocoa pods again came up for discussion. Mr. Cradwick urged that it be given serious consideration as it is one of the most important agricultural questions now before the Society. He said the following resolutions and suggestions would be discussed at the Half Yearly Meeting on the 15th July, and he would ask this Branch to support them: 1. That no person should be granted a license unless he can keep his books in English. 2. No person who has not the proper equipments for curing cocoa should be granted a license. 3. No person who has a license to retail liquor should be granted one to buy cocoa. 4. The Authorized Persons should be given authority to inspect the books of produce dealers. 5. Growers should be licensed to sell cocoa. All agreed that this Branch should support these resolutions. The Secretary then reported that the Committee on the Co-operative Scheme had not yet met. The President said he was jealous over the result of the Cottage Holding Competition in other parts of the parish. He had, therefore, to ask the Instructor to give the members some information about it. Mr. Cradwick expressed his pleasure in hearing this. He then read the rules from the June JOURNAL and explained the whole matter carefully. He hoped there would be members and others from this district competing in the coming Competition. He then mentioned that he is arranging to have a Cocoa Cultivation Competition among the members of each Branch in his district, which he promised to deal with more fully at his next visit in August. He was asked very many questions by several of the members about Cocoa planting and curing which he answered satisfactorily. The President moved, the Secretary seconded, and was agreed that 5/- be sent from the funds of the Society to the War Contingent Fund. Miss Roslyn Bradshaw and Messrs. John Micklejohn, W. H. Birch and Eugene Banbury became members. The meeting adjourned. J. E. BROOKS, Secretary.

CHRISTIANA (Manchester.)—The regular quarterly meeting was held in the Court House at 2 p.m. on Friday, July 2nd, 1915. Present: R. J. Miller, Esq. (Chairman), Messrs. Thos. Powell (Instructor), C. D. Neilson (Inspector of Schools), and several other members. The Chairman told how highly a small gift of ginger sugar was appreciated by the wounded soldiers at the front, and urged on the Society to aid in sending a larger consignment of the same stuff. The Society unanimously voted the sum of five pounds (£5) to help in the sending of more ginger sugar. R. J. Miller, Esq., was chosen delegate to represent the Branch at the Half-Yearly Meeting in Kingston on July 15th, 1915. New members: Messrs. R. A. Ewbank, Robt. Gentle, jr., and John Walker. Meeting adjourned till October 1st., 1915.

W. M. O'MEALLY, Secretary.

LAMB'S RIVER (Westmoreland.)—This Branch Society met at Mt. Hermon on Friday, 2nd July. Mr. H. Ward was asked to preside. There were 18 persons present. Letters were read from the Parent Society, dealing with Branch Notes, Half-Yearly General Meeting of the Society, etc. It was considered too late to send up any resolution from this Branch, as it would not reach the Secretary in time, according to the prescribed rule, neither was it practicable to send a delegate to the meeting. It was arranged that discussions be carried on from time to time on matters of practical importance that occur in the JOURNALS. The Peas and Tobacco competitions were dropped for the present. There was a discussion on Arrowroot, and it was decided to ask Mr. Barclay to make another effort in Canada, to see what could be done, as it is believed there will be a demand for this article in the hospitals in which the wounded soldiers are inmates. At the next meeting there will be a discussion on "Authorized Persons," their duties and requital; also a debate on Cocoa vs. Coffee. Mr. Briscoe gave an informal lecture on Cocoa and Corn. He advocated the importance of Cocoa cultivation: how it is easy to be grown in Banana districts, as both plants thrive together. With the facilities offered at the Montpelier Nursery, all should avail themselves of the privilege of getting plants free. He explained how the plants should be taken from the bamboo pots; also the process of fermentation, in the different varieties of Cocoa, and the time allowed for fermenting and drying. With regard to corn, he thought that these districts are capable of producing corn that would compare favourably with the best corn growing districts of the world, and it would be profitable to make corn growing a systematic industry. A vote of thanks was accorded Mr. Briscoe for his lecture. He replied, assuring the meeting that the best thanks would be the practical application of his advice in the lecture. The next meeting of the Branch was fixed for Friday, 3rd September, at 11 a.m. The Secretary moved a vote of thanks to the

Chairman for presiding over the meeting, to which he replied, stating that he takes pleasure in helping in any cause which makes for the improvement and benefit of the Island.
U. L. BROWN, Secretary.

HOPEWELL (Hanover.)—The regular bi-monthly meeting was held in the Bethel Schoolroom on Friday, July 2nd, the President in the Chair. Minutes of May 7th were read and confirmed. Action of Postal Department *re* office at Flint River came up for discussion. The Meeting authorized the President to write *re* the removal of the Post Office. Mr. W. H. Rigg was appointed delegate to attend the Half-Yearly Meeting in Kingston in July. The cow peas in possession of the Secretary is to be sold at half price and re imburse himself. It was agreed that authorized persons be insisted on to give reports regularly. Leonard Malcolm recommended as an authorized person for Great Valley. Leonard Malcolm, R. M. McFarlane of Unity Hall, and W. H. Rigg of Flint River, became members of the Branch. Mr. W. H. Rigg was asked to give some hints on sugar boiling at the next meeting. Subscriptions for the current year were handed in. Members were asked to contribute towards the Contingent Fund. Society promised to make an effort to raise £15 towards the fund. President agreed to give 1/- per week until £15 is raised. Flint River Sports in connection with Contingent Fund is to come off on 5th August on the Flint River Show Grounds. Loan Bank matter thrown out for members to think over, and a special meeting to be called to deal with it at some future time.
A. SHAW SAMUELLS, Secretary.

BAMBOO (St. Ann.)—At the regular monthly meeting held on the 3rd of July, Mr. Charles Smith, second Vice-President, presided. Fifteen members and the Instructor were present. Correspondence *re* Authorised Persons and E.X.O. for rats were read and discussed. The members have agreed to start a rat killing campaign as soon as the poison comes to hand. One dozen 1 - tins have been ordered for the Branch. Final arrangements for judging the plots of the corn competitors took place on the 5th inst. by the Instructor. The prize giving bids fair to be successful. Shed over the corn mill fixed for 17th inst., also Committee Meeting to consider plans for the improvement of the Society, and demonstration of the use of Cooper's Cattle Dip by the Instructor. Walking sticks brought in for convalescent soldiers at the front. Report from Treasurer of the Penny Bank respecting the lodgement of £7 in the Bank of Nova Scotia by the Trustees. Next meeting of the Branch, 1st Saturday in August. Members please note that attendance at monthly meetings, every first Saturday of month, strengthens the Branch and gives life to important subjects discussed. Very fair and seasonable weather since January. Price of bananas at the beach 1/1½ per bunch. Foodstuffs and sugar plentiful.
J. A. PERKINS, Secretary.

WINDSOR FOREST (Portland.)—The regular monthly meeting was held at the Schoolroom on Monday, the 5th July. Mr. Edward Berry presided, and the Instructor, nine members and the Secretary were present. Arising from the minutes, the President asked for the report of the Committee appointed at the last meeting to audit the Treasurer's account. The Secretary explained that the Committee did not sit on account of unforeseen circumstances. The Chairman then moved, and it was agreed, that a new Committee be formed for the purpose of auditing the Treasurer's account, and to present a report at the next meeting of the Society. The Secretary read letter from the Secretary of the Parent Society acknowledging the receipt of Branch Notes of the 3rd May last, also the conclusion of the Branch *re* the Produce Protection Law. Five members paid in their fees. The Instructor gave his usual helpful address. The meeting adjourned at 9 .p.m., to the first Monday in August.
C. A. SMITH, Secretary.

BULL HEAD (Clarendon.)—On the 6th July, 1915, this Branch met, at Mt. Carmel. There were present, the Instructor, seven members, and a number of visitors, including many ladies. Mr. D. A. Robotham was asked to preside. The Instructor addressed the meeting. His subject was walking sticks for the wounded, and subscribing to the Contingent Fund. Mr. Reeves agreed to cart some to the Dank Station. The members present then subscribed 40/- and pledged themselves to augment this amount. It was moved and seconded that the Society's name be changed to the "Mt. Carmel" Branch Society. This was agreed to.
J. S. ROBINSON, Secretary.

ALBANY (St. Mary.)—The regular monthly meeting was held on the 7th inst. The Rev. W. D. Henderson presided, and Wm. Cradwick, Esq., Instructor, was also present. There were twenty-five officers and members, and seven visitors. Dealing with the Show Committee matters it was found that there were difficulties

in the way of winding up, and two gentlemen were appointed to receive the report and present the results before the Society as soon as possible. Discussion next opened *re* the purchase of Cocoa in pods, Mr. Cradwick explaining what would be considered "proper equipment" for curing the cocoa, and a number of resolutions were passed in line with the same from Belfield Branch, with this difference, that, the minimum number of pods for which buyers should have curing equipment be 15,000 instead of 10,000. L. S. Clarke, Esq., gave notice that he had received his travelling certificate as delegate to the Half Yearly General Meeting, and he was prepared to attend as appointed. Four members were enrolled, paying thier subscription. Decided that meetings shall be held on first Wednesday in each month next meeting 4th August, at 4 p.m. H. F. Walker, Esq., reported the Society's pig to be doing fairly well. Mr. Cradwick intimated demonstration, Friendship, Tuesday, 13th July, and asked the members to be punctual. Adjourned.

C. L. DRYDEN, Secretary

RICHMOND (St. Mary.)—The monthly meeting was held on Wednesday evening, the 7th July, 1915. Present were: the Assistant Instructor, the President, 14 members and one visitor. The Secretary being unwell, his place was occupied by the Assistant Secretary. A letter from the Hon. R. P. Simmonds was read. The President informed us that he had recieved a letter from Mr. Barclay supplying an agenda and certificate relative to the Half-Yearly Meeting. The President corrected a misunderstanding arising from the Governor's address at the Richmond Court House on the 25th ultimo. The next thing dealt with was, tbe planting of corn and cow peas. This was so warmly taken up, that it became a matter of debate for the next meeting. That is, half an acre of corn, and half an acre of cow peas which is more remunerative. Mr. W. Thomas for corn, and Mr. T. Davis for the cow peas. Mr. W. Thomas gave notice that at the next meeting he will ask the Instructor to visit his cultivation. Ten shillings was voted the delegate to the Half-Yearly Meeting. The meeting closed till the 4th August, 1915. D. SMITH, Asst. Secretary

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WARSOP (Trelawny.)—Monthly meeting held 7th July, 1915. Present: E. Arnett, Instructor, and Mr. Rennie, his assistant, the Secretary and 10 other members. Mr. Woodfin was asked to preside. Arising out of the minutes was the question of the possibility of sending a few dozen walking sticks for wounded soldiers at the front. It was agreed to prepare serviceable sticks for the purpose. Dealing with the sale of bananas, the Instructor here pointed out tbat the surplus fruit might be used in feeding pigs and fowls, which will eventually be exchanged for money. Meeting decided that, owing to the fact that infected animals are often slaughtered for food in these districts, the Parent Society be asked to take the necessary steps to put a stop to this unwholesome practice. At this stage, Mr. Rennie gave a very useful and interesting address on th rearing of poultry. He was given a hearty vote of thanks. It was also agreed that, owing to the dangerous state of the Parochial Roads of this district, a petition be sent to the Board requesting an early attention to the same. Meeting was brought to a close by the singing of the National Anthem. U. K. WALTERS, Secretary.

GIDDY HALL (St. Elizabeth.)—A meeting was held on Wednesday, July 7th. Present: Rev. J. Maxwell, President; J. Briscoe, Esq., (Instructor) and 10 other members. The President read a letter of resignation from the Secretary. It was resolved to thank Mrs. Maxwell for her past valuable services and regret was expressed that she could not continue in office. Arising out of the Minutes, Mr. Walcott brought up, as a reminder, the subject of the Black River and taxation of boats. The officers for the ensuing year were then elected. Rev. J. Maxwell, President; O. E. Tomlinson, Esq., and Rev. J. W. Mornan, Vice-Presidents; Mr. James Laird, Treasurer; Mr. Chas. Stuart, Secretary. The Secretary read a letter from the Secretary of the Parent Society *re* Authorized Persons. It was stated that four men had been appointed but they had never received hand-cuffs. The Instructor moved that these Authorized Persons should return their badges as they have done nothing and with one exception, J. Briscoe, will not attend the meetings. Mr. Walcott seconded this, and it was unanimously carried. This branch is of the opinion that Praedial Larceny is on the increase in the District and would suggest that instead of Authorized Persons the Government should increase the number of District Constables and pay them for patrolling , for it is unreasonable to expect men to lose their time trying to catch the Praedial thief knowing that they will get no remuneration for their services unless they catch him, which is ten chances to one they wont. Mr. Shakespeare supported this by giving incidents of his 33 years experience as a Rural Headman, when he had to patrole and report regularly. The President said that he had done his best in trying to get the road through White Hall,

Hamstead, Green Valley to Mocho, and that it will be put through, but not till after the war. In the meantime the Superintendent of the P. W. D. will survey it as soon as possible. The Instructor then gave a valuable address on the proper planting and curing of corn, and advised the members to begin cutting and preparing lands at once for planting in September, and urged them to co-operate in selling their produce when they could command better prices. He appealed for walking sticks for the wounded soldiers, and the President kindly offered to send them up to Ipswich free of charge. All sticks are to be brought to the next meeting, which will be Friday, July 30th. CHAS. L. STUART, Secretary.

SMITHVILLE (Clarendon.)—The regular monthly meeting was held on the 9th July, 1915. There were present: Messrs. W. A. Bryan, President; S. A. Schleifer, Instructor, the Treasurer, the Secretary and twenty-two members, besides over forty visitors. The subject of corn-growing was discussed. The Instructor read portions from pages 206 and 207 of the June JOURNAL of Agriculture, bearing on the subject. He emphasized the proper drying of corn and referred to the stigma on our Jamaica Products, principally Cocoa and Coffee. It was suggested that the large proprietors should take the initiative step and put under cultivation 100 acres or more of corn and the small settlers would follow in their footsteps. Report of the authorized persons: A. B. Gayle reported arresting James Smith who was begged off by the owner of the stolen goods after he was taken before the Justice of the Peace. Daniel Stone reported that on the very rainy night of 19th June, he arrested Simeon Williams in the provision ground belonging to John Roberts, of Victoria. Williams had stolen more than a hamper of yams (5/- in value). On the 20th he took the prisoner to the Police Station at Frankfield, eight miles off and thence to the J.P. three miles further. To his surprise, the owner of the stolen goods asked the Justice of the Peace to pardon the offender. The Meeting thought that this "constant begging off" of praedial thieves tends to encourage them in their bad practices and should not be indulged in. The Law pertaining to the duties and power of the Authorized Persons as seen in the June JOURNAL was read by the Instructor. The matter of subscription to the Jamaica War Contingent Fund was next dealt with and several members promised to contribute. Twelve members also guaranteed walking sticks to be sent to convalescent wounded soldiers of Britain. At the next meeting Mr. Schliefer will lecture on coffee-growing.

J. A. EDWARDS, Secretary.

THE BECKFORD-BLACKWOOD BRANCH (Clarendon.)—The meeting was held in Mt. Phillips Class House on Saturday, the 10th July, 1915. Present: T. D. Baillie, Esq., President; twelve members, including Assistant Secretary; also six visitors. The Instructor presided. He gave a brief and interesting address on "The Primary Object of the Agricultural Society," also the usefulness of the monthly JOURNALS. It was proposed that a free-will offering should be made for the help of the Jamaica Contingent, which should be given liberally by every individual. Mr. J. R. Thomas (teacher) was appointed Treasurer. Our next monthly meeting will come off on the 9th August, 1915, when all subscriptions will be looked for. Certain misconceptions that were in the minds of many of the members were eradicated through the lecture of the Instructor. The Authorized Persons were spoken to *re* their duty. The National Anthem was sung. J. B. DAWKINS, Secretary.

SEEDS FOR PLANTING.

Selected Seed Corn, White and Red Guinea Corn, Cowpeas, Jerusalem Peas, Overlook Beans.

For preserving Corn from weevils—Napthalene.

Fresh Vegetable seeds early in October.

Seed Potatoes (imported) end of October.

Books—Banana Growing in Jamaica, 3d. local postage free.

Hints on Poultry Keeping in Jamaica, 2d. local postage free.